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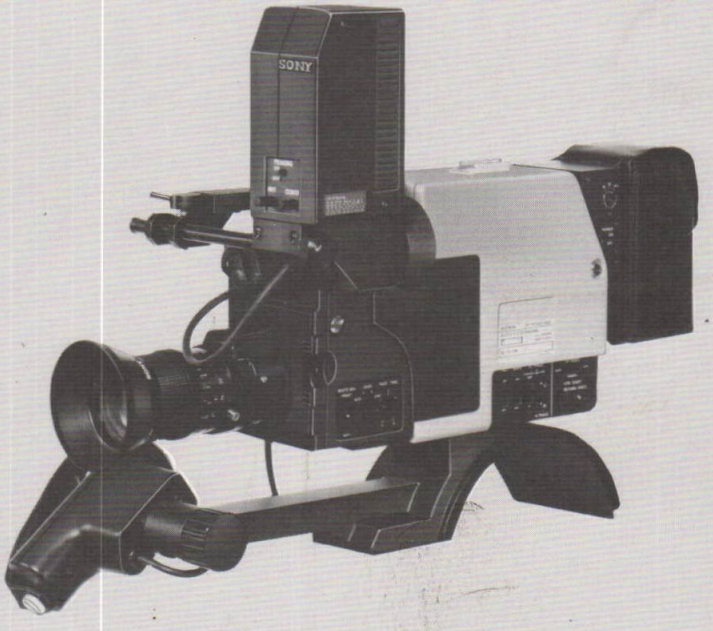
SMF TRINICON COLOUR VIDEO CAMERA
ELECTRONIC VIEWFINDER
BATTERY ADAPTOR
BRACE

DXC-1800P
DXF-3CE
DC-6
VCT-8

Revised-4



SONY®

SERVICE MANUAL

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SAFETY RELATED COMPONENT WARNING

Components identified by shading and ⚠ marked on the schematic diagrams and parts list are critical to safe operation. Replace these components with SONY parts whose part numbers appear as shown in this manual or in supplements published by SONY.

X-RAY RADIATION WARNING

Be sure that parts replacement in the high voltage block and adjustments made to the high voltage circuits are carried out precisely in accordance with the procedures given in this manual.

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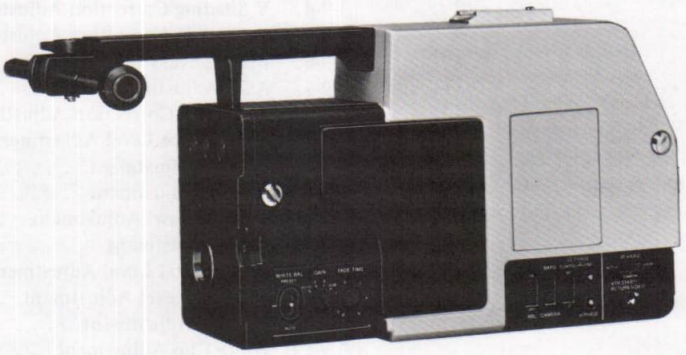
DXC-1800P

SMF TRINICON COLOUR VIDEO CAMERA



SPECIFICATIONS

Pickup tube: 2/3-inch SMF Trinicon

Signal system: CCIR standards PAL colour

Scanning system: 625 lines; 2:1 interlace, 25 frames

Sync system: Internal sync
External sync with GEN LOCK input (BS or VBS)

Scanning frequency: Horizontal: 15.625 kHz
Vertical: 50 Hz

Horizontal resolution: 300 lines

Sensitivity: F4 (at 2,000 lux)

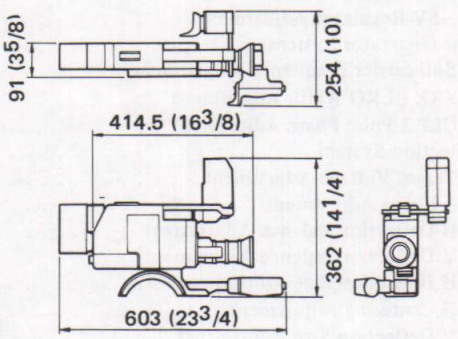
Video output: 1.0 Vp-p, sync negative, 75 ohms, unbalanced

Video signal-to-noise ratio: Luminance: 48 dB

Output connectors: VIDEO OUT connector, BNC
14 pin connector, Q-type
(1) GND
(2) Camera power input, 12 Vdc
(3) Audio output (X)
(4) Audio output (Y)
(5) Audio output (GND)
(6) Video input/output
(7) Video input/output (GND)
(8) Return video input (GND)
(9) Return video input
(10) BATT ALM signal/CCU serial data input
(11) NC
(12) REC IND signal input
(13) VTR START/STOP signal output
(14) Audio monitor input

Microphone: Built-in electret condenser microphone, omnidirectional
External MIC jack (mini jack)
–60 dB, suitable for microphone with less than 600-ohm impedance

Dimensions:



UNIT: mm (inch)

Power requirements: DC 12 V

Power consumption: 11 W

Operating temperature: 0° to +40°C (32°F to 104°F)

Storage temperature: –20° to +50°C (–4°F to 122°F)

Weight: Camera: 3.1 kg (6 lb 13 oz)
Camera + zoom lens + viewfinder + battery adaptor + brace:
5.3 kg (11 lb 11 oz)

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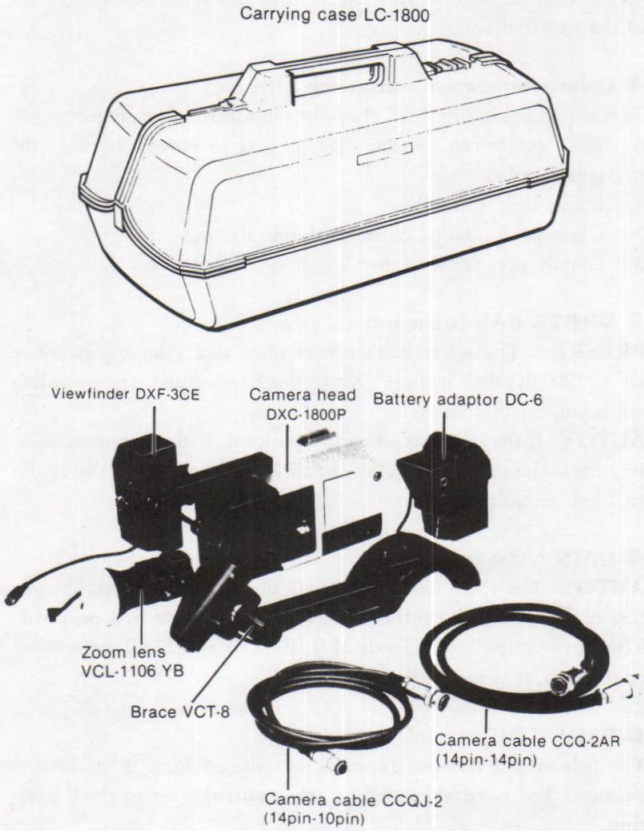
SECTION 1
GENERAL DESCRIPTION

1-1. CAMERA COMPONENTS

The accessories supplied differ depending on the medel—DXC-1800PK, 1800PL or 1800PH—purchased as shown below. The instructions in this manual deal with the DXC-1800PK which has the most accessories.



	DXC-1800PK	DXC-1800PL	DXC-1800PH
Camera head DXC-1800P	○	○	○
Viewfinder DXF-3CE	○	○	×
Brace VCT-8	○	○	×
Carrying case LC-1800	○	○	×
Battery adaptor DC-6	○	○	×
Zoom lens VCL-1106 YB	○	×	×
Camera cable CCQ-2AR (14 pin—14 pin)	○	○	○
Camera cable CCQJ-2 (14 pin—10 pin)	○	○	×

○ : Available × : Not available

1-2. FEATURES

2/3-inch SMF Trinicon
The 2/3-inch SMF Trinicon camera tube helps to increase the uniformity of the picture, the picture quality, the sensitivity and the resolution ; and it also minimizes lag.

Automatic video output level control
The video output level is automatically controlled with the automatic iris control system and with the AGC (Automatic Gain Control) circuit so that a stable picture can be recorded under wide-range of lighting conditions. The fixed output level of 0 dB, 6 dB or 12 dB is also selectable.

Automatic white balance adjustment
White balance is easily and reliably attained. The set value is held by the memory function. At the PRESET position of the WHITE BAL switch, the approximate white balance is obtained under most lighting conditions so that you can start recording promptly.

Automatic black level (ABL) adjustment
When the whole picture is very light as in outdoor shooting, the black level is reduced to the appropriate level so that the well-contrasted picture can be obtained.

f1.4 6× motorized zoom lens (with macro function)
The camera comes with a motorized 6× zoom lens (f1.4, 11 to 70 mm) featuring a macro mechanism, auto iris and auto lock. The macro switch makes it possible to record subjects down to a distance of 20 mm.

Use with various kinds of videocassette recorder
The DXC-1800P can be connected to the various kinds of VTR (videocassette recorder) such as the VO-4800PS, equipped with Sony Q-type (14 pin) camera connector, the VO-3800P equipped with Sony J-type (10 pin) camera connector, or other videocassette recorders which has the BNC or UHF-type video input connector.

DXF-3CE electronic viewfinder
This allows the pictures being recorded to be monitored.
When used with a Sony portable VTR, it is possible to see the playback picture immediately so that the recording content can be checked (playback monitor) on the viewfinder.

Alarm functions
The warning lamps in the viewfinder will alarm battery discharging, deficient light, excessive lens stopdown and deficient output level, and also indicate the various conditions of the VTR when used with the VO-4800PS Video cassette recorder.

Fader
The fader allows the production of pictures with fade-in and fade-out effects. It is possible to choose any fade time from 0 to about 5 seconds.

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Low power consumption
The camera features a low level of power consumption and 2 hours of continuous operation are possible using the battery (BP-60) mounted on the camera.

Studio applications
The camera comes with an external sync function, required when a multiple number of cameras are being employed simultaneously. With the CCU-1800P camera control unit (optional), the camera can be used in the studio.
When combined with the CCU-1800P, the video level, chroma level and pedestal level, etc. can be controlled.

3-way power supply
Power can be supplied by the BP-60 battery pack (optional), CMA-7CE camera adaptor (optional), and also by a portable VTR.

Other features
- The 3-position color temperature conversion filter adjust for differing lighting conditions both indoors and outdoors.
- The remote control switch permits the tape in a portable VTR to be started and stopped.
- The built-in color bar signal generator comes in handy for video monitor and overall system adjustments.
- The highly sensitive electret condenser microphone permits simultaneous audio recording.
- The earphone jack (for VTRs with Sony Q-type (14 pin) connector) allows the sound to be monitored during recording.
- The aluminum diecast body displays high reliability and more than enough rigidity to withstand rough handling.

1-3. LOCATION OF PARTS AND CONTROLS

❶ **REMOTE** connector
Connect the cable of the brace. The motorized zoom as well as the starting and stopping of the VTR can be controlled at the brace side.

❷ **LENS** connector
Connect the cable of the zoom lens. It serves for the motorized zoom and auto iris, etc.

❸ **VF** (viewfinder) connector
Connect the cable of the viewfinder. It serves as the input connector of the viewfinder.

❹ **Color temperature conversion filter**
This is selected in line with the light illuminating the subject.
0 : Blind (use when camera is not in use, to prevent burning the camera tube)
1 : Iodine lamp (3200°K)
2 : Clear day outdoors, outdoors during daytime (sunlight)
3 : Cloudy sky, rainy weather

❺ **WHITE BAL** (white balance) switch
PRESET : The white balance is attained at a value under iodine lamp (3200°K) illumination. Set to this position and start recording when you are in a hurry.
AUTO : If the switch is set to this position, with the camera pointing the white subject, the white balance will be automatically attained a few seconds later.

❻ **GAIN** (video level) selector
AUTO : The video level is automatically adjusted, so that the picture is clear and well-contrasted. **Normally, set to this position.**
0/6/12 : Output video levels of 0 dB, 6 dB and 12 dB are selected respectively at these positions.

❼ **FADE TIME** control
The fade-in and fade-out time can be selected from 0 to about 5 seconds. **For normal recording, the control is set to the 0 position.**

❽ **SC PHASE COARSE** adjustment switch
This is adjusted when using a multiple number of cameras simultaneously.
The switch allows the SC phase difference between the gen-lock input ㉒ and the video output signals to be coarsely adjusted.

❾ **SC PHASE FINE** control
This is used for fine adjustment of SC phase after the coarse adjustment performed by the SC PHASE COARSE switch ❽.

❿ **H PHASE** control
This is used to adjust the H phase difference between the gen-lock input and the video output signals when a multiple number of cameras are used.

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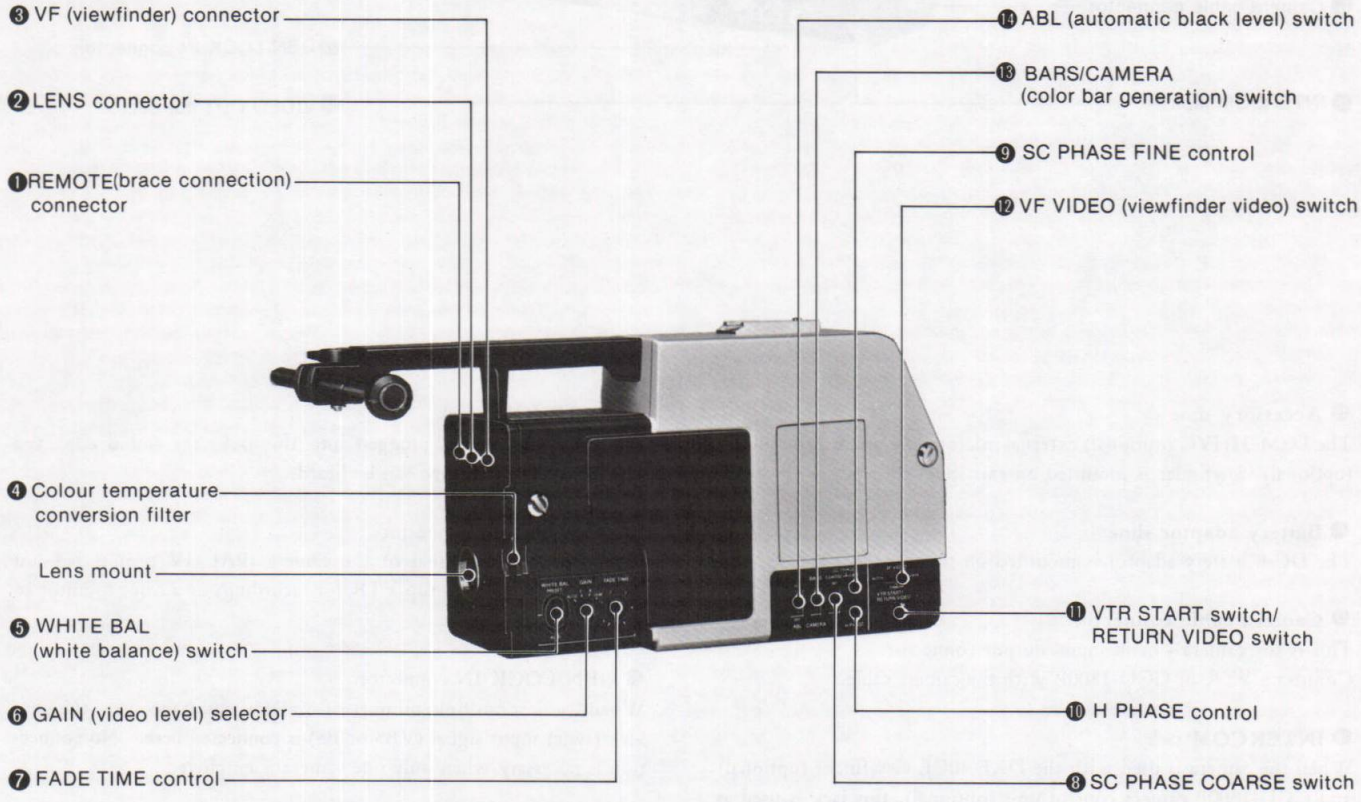
⓫ VTR START switch / **RETURN VIDEO** switch
When the camera is connected to a portable VTR, depress the switch to start recording. To stop recording press the switch again.
When the camera is connected to the CCU-1800P, the return video pictures can be monitored on the viewfinder while this switch is kept depressed. When the switch is released, the camera's pictures can be monitored.

⓬ VF VIDEO (viewfinder video) switch
This switch is used to select the pictures shown in the viewfinder.
AUTO : Camera pictures during recording, and VTR pictures during playback. **Normally, set to this position.**
CAMERA : Camera pictures during both recording and playback.
VTR : VTR pictures during both recording and playback.

⓭ BARS/CAMERA (color bar generation) switch
When set to BARS, the camera supplies a color bar signal. Use the switch for adjusting a video monitor, etc. **Normally, it is set to CAMERA.**

⓮ ABL (automatic black level) switch
When this switch is set to ON (when the whole picture is very light, ie outdoor shooting), the black level is reduced to the appropriate level and well-contrasted pictures are obtained. **Normally, the switch is set to the OFF position.**


❸ VF (viewfinder) connector
❷ LENS connector
❶ REMOTE(brace connection) connector
❹ Colour temperature conversion filter
Lens mount
❺ WHITE BAL (white balance) switch
❻ GAIN (video level) selector
❼ FADE TIME control
⓮ ABL (automatic black level) switch
⓭ BARS/CAMERA (color bar generation) switch
❾ SC PHASE FINE control
⓬ VF VIDEO (viewfinder video) switch
⓫ VTR START switch/ RETURN VIDEO switch
❿ H PHASE control
❽ SC PHASE COARSE switch

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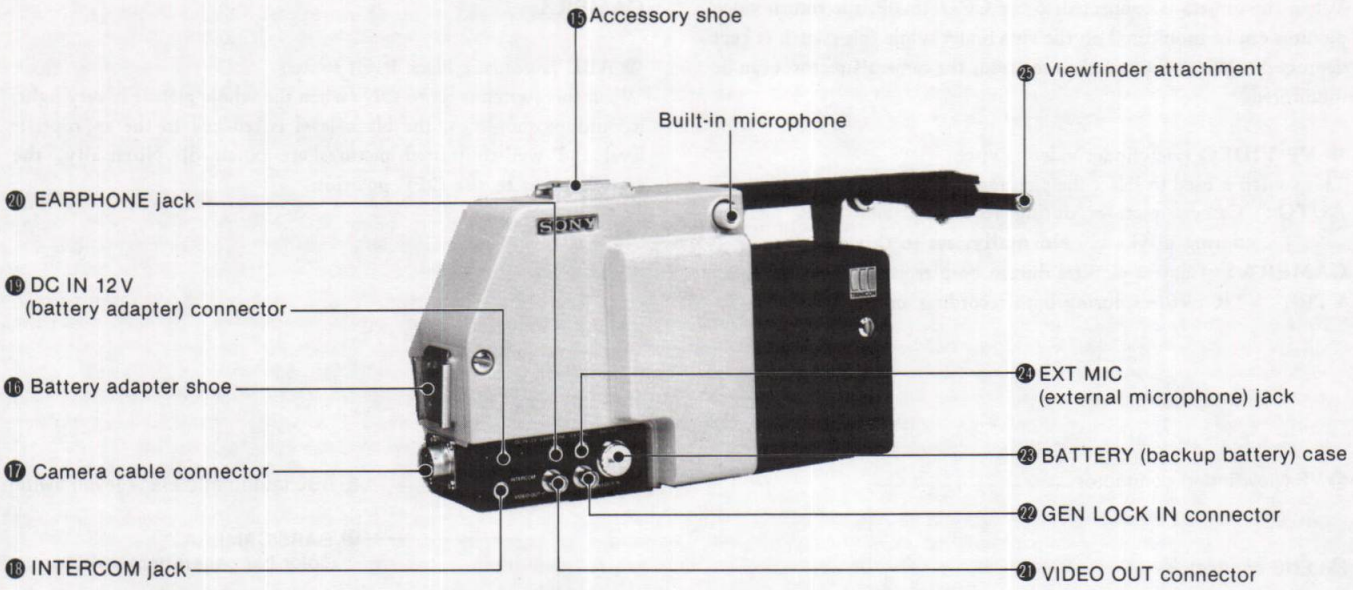

⓯ Accessory shoe
The ECM-31HVC (optional) external microphone or the DXF-40CE (optional) viewfinder is mounted on this shoe.

⓰ Battery adaptor shoe
The DC-6 battery adaptor is mounted on this shoe.

⓱ Camera cable connector
This is the camera's main input/output connector.
Connect a VTR or CCU-1800P with the camera cable.

⓲ INTERCOM jack
When the camera is used with the DXF-40CE viewfinder (optional) and CCU-1800P camera control unit (optional), this jack is used as the input/output terminal for the intercom.

⓳ DC IN 12 V (battery adaptor) connector
Connect the cable of the battery adaptor. Power is then supplied from the battery.

• When the battery adaptor is connected, the camera cannot be operated with other power sources.

⓴ EARPHONE jack
When an earphone is plugged into this jack, the sound conveyed through the microphone can be heard.

㉑ VIDEO OUT connector
The video output signal of the camera (PAL 1V p-p) is fed out here. Connect a desk-top VTR for recording, or a color monitor to check the pictures.

㉒ GEN LOCK IN connector
When using a multiple number of cameras simultaneously, the gen-lock (sync) input signal (VBS or BS) is connected here. No connection is necessary when only one camera is employed.

㉓ BATTERY (backup battery) case
This houses the battery for the white balance memory.

㉔ EXT MIC (external microphone) jack
This is used when recording the sound with an external microphone. The built-in microphone is automatically cut off.

㉕ Viewfinder attachment
This is used to attach the DXF-3CE viewfinder.

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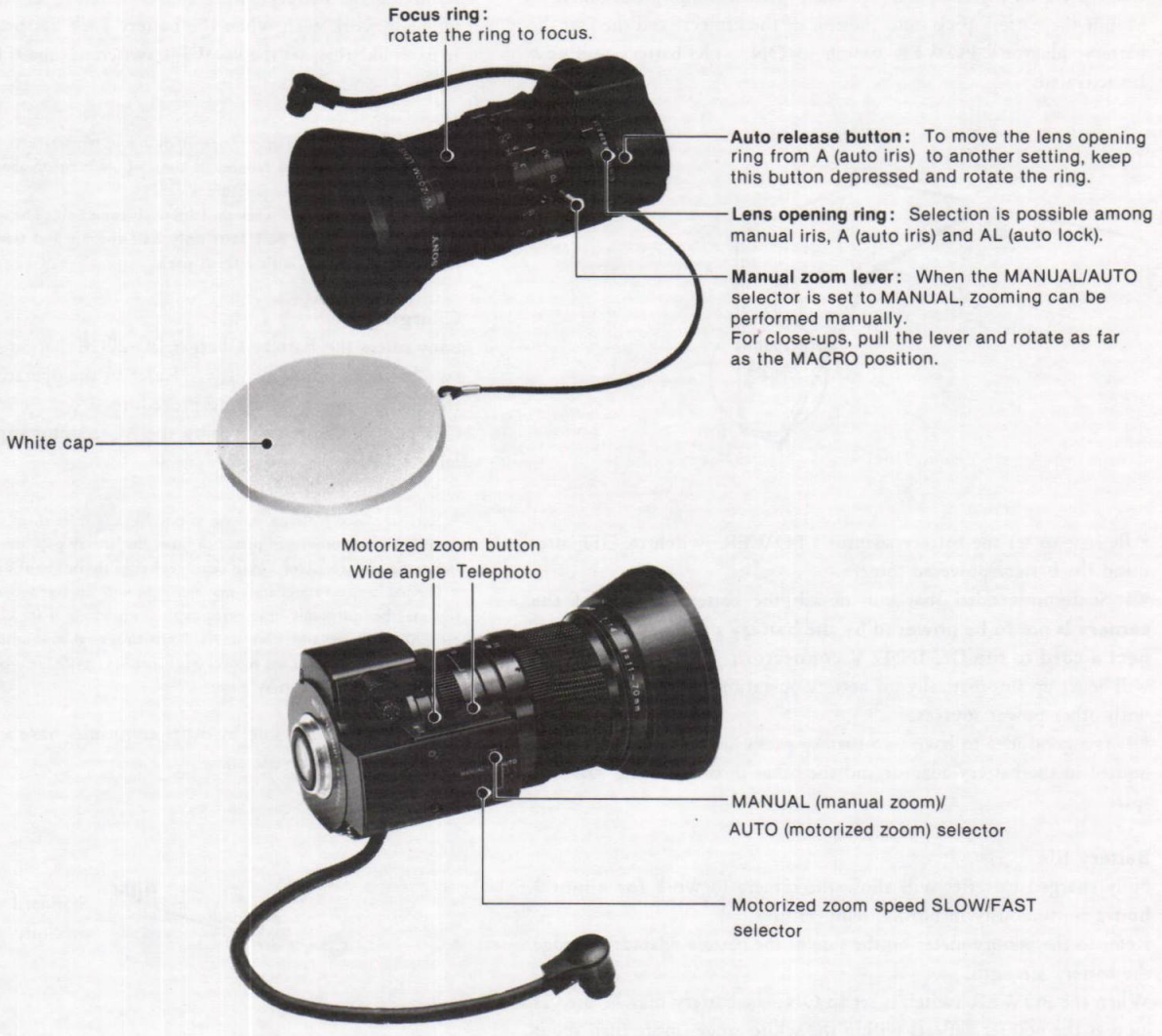
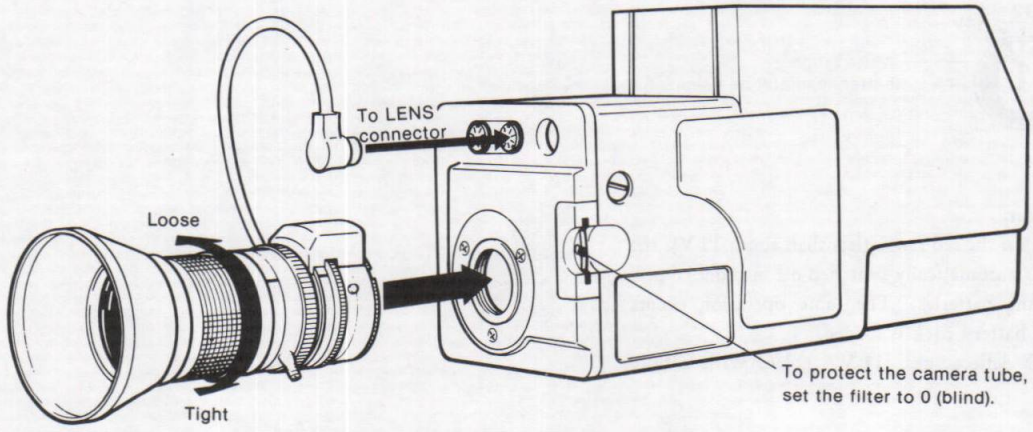
ZOOM LENS (VCL-1106YB)


Focus ring:
rotate the ring to focus.
Auto release button: To move the lens opening ring from A (auto iris) to another setting, keep this button depressed and rotate the ring.
Lens opening ring: Selection is possible among manual iris, A (auto iris) and AL (auto lock).
Manual zoom lever: When the MANUAL/AUTO selector is set to MANUAL, zooming can be performed manually.
For close-ups, pull the lever and rotate as far as the MACRO position.
White cap
Motorized zoom button
Wide angle Telephoto
MANUAL (manual zoom)/
AUTO (motorized zoom) selector
Motorized zoom speed SLOW/FAST selector

Mounting the zoom lens onto the camera



- **The camera's lens mount is C mount. Any C mount lens can be attached.**
- **When the protective cap is placed over the mounting section, remove it first before attaching the lens.**

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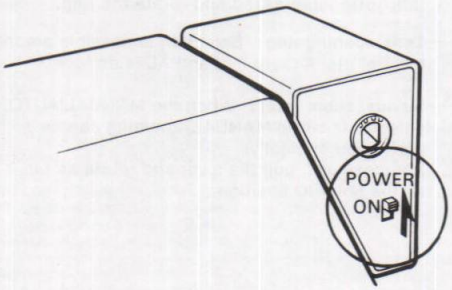
1-4. POWER SUPPLY

BATTERY PACK

Use the BP-60 battery pack (optional) when recording outdoors. Mount the battery pack onto the rear of the camera, and then set the battery adaptor's POWER switch to ON. The battery will now be activated.



• Be sure to set the battery adaptor's POWER switch to OFF after using the battery-powered camera.

• It is recommended that you detach the battery adaptor **if the camera is not to be powered by the battery pack. Do not connect a cord to the DC IN 12 V connector ;** otherwise the camera will be set up automatically for battery operation and it will not work with other power sources.

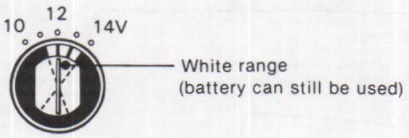
• It is a good idea to have two battery packs, available. One can be housed in the battery adaptor and the other in the carrying case as a spare.

Battery life

Fully charged batteries will allow the camera to work **for about 2 hours** continuously in normal temperatures.

Refer to the battery meter on the side of the battery adaptor to judge the battery strength.

When the POWER switch is set to ON, the battery may be used as long as the pointer deflects within the white range (more than about 11 V).



Auto shut-off mechanism

If the pointer deflects within the red range (less than about 11 V), the battery adaptor's power is automatically switched off in order to prevent over-discharge of the batteries. The same operation occurs when an over-discharged battery pack is loaded.

When the meter pointer deflects near **11 V,** replace with a fully charged battery pack.

• Always set the battery adaptor's POWER switch to OFF when removing the battery pack. If the switch is set to ON, the camera will not work even when the battery pack has been installed again. In cases like this, set the POWER switch to the OFF and set it to ON again.

• Just as with car batteries, the operation in low temperatures shorten the life of the battery pack BP-60. (The number of hours of use is cut to about half that at normal temperature when the temperature is 32°F)

Also, the life is shortened when the batteries become old. The service life is over when a fully charged battery pack **lasts only half the normal temperature operating time and so replace with a fresh pack.**

Charging

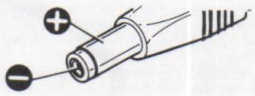
Sony offers the Battery Charger BC-20CE charger which can charge two batteries simultaneously. Refer to the operating instructions of the charger for the charging procedure.

Charging is also possible using the AC adaptor supplied with a portable VTR.

• Recharge used batteries as soon as possible and store them safely. If they are left discharged for a prolonged period of time, the battery pack **may become unusable.** If batteries are stored for a long time, **recharge them about once every 6 months.**

• The red lamp on the charger may not light with an overdischarged battery pack and this may be mistakenly interpreted as the completion of the charging operation. In cases like this, recharge from several hours to several days until the red lamp lights. If the battery pack does not recover its charge, its service life is over and so it should be replaced with a new battery pack.

Some battery packs sold by other companies have a plug with reverse polarities. Do not use these.



Standard polarities on Sony pack

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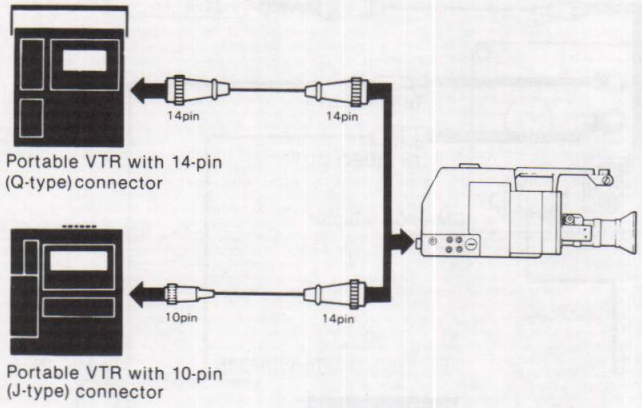
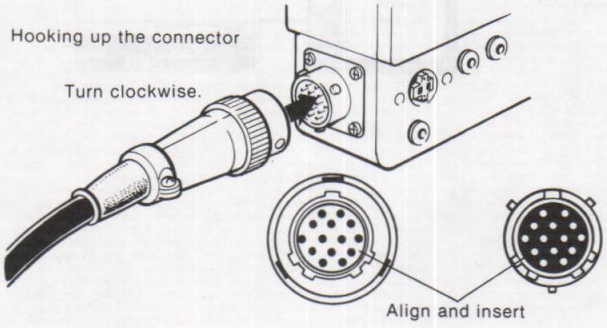
PORTABLE VTR

When the connections are made as in the figure, power can be supplied from the VTR through the camera cable (supplied) to the camera.





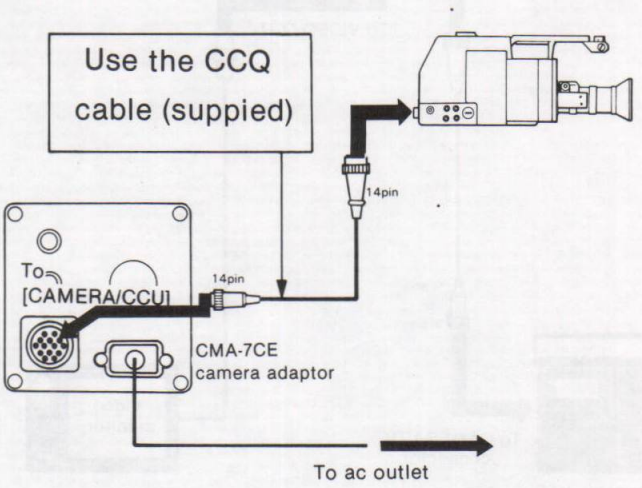
When the camera is powered by the batteries contained in the portable VTR VO-4800PS, the continuous **operating time is 40 minutes** under normal temperature conditions.

- The operating time varies greatly in accordance with the VTR operation. It is shortened when the VTR is set to the fast forward or rewind mode.
- Consult the operating instructions of the VTR for details on the power supply to the portable VTR. The portable VTR can operate on AC power or batteries.

AC ADAPTOR

The camera can be powered by ordinary AC power when the CMA-7CE camera adaptor (optional) is used.

Connect as in the figure, and the camera is mode operational when the power of the CMA-7CE is switched on.



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1-5. CONNECTIONS

PORTABLE VTR

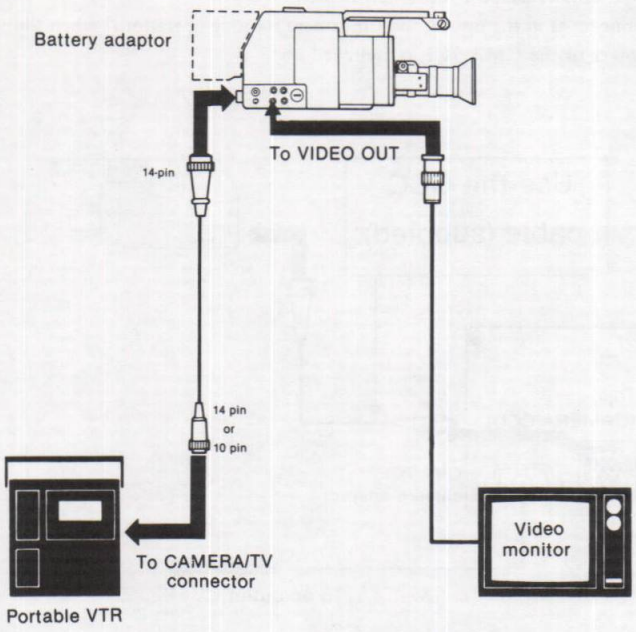
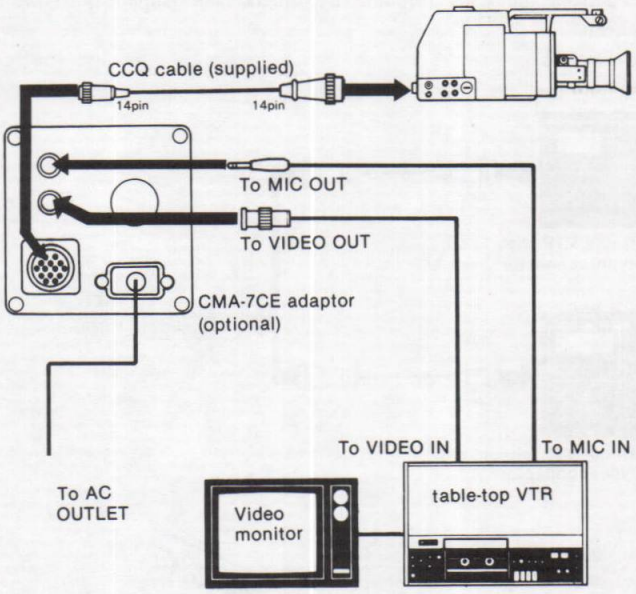


TABLE-TOP VTR



Camera cable connector

The video line output signal (PAL 1 V p-p) and the audio output signal from the built-in microphone can be fed out from the rear panel camera cable connector (Q-type).

As is clear from the explanation on the power supply given on the page before, the camera cable also serves as the power supply cable.

VIDEO OUT connector

The ordinary video line output signal (PAL 1 V p-p) can be fed out from this connector.

Since this is a BNC connector, use an UHF↔BNC conversion connector (MJ-BNCP) if the video equipment connected is equipped with UHF-type connectors.

Extending the camera cable

- When the camera and portable VTR are connected, the camera cable can be extended up to 10 meters (33 ft.) more.
- When the camera and the CMA-7CE camera adaptor are connected, the extension is as follows :

UP to 25 meters (82 ft.) more when the CMA-7CE MIC OUT connector is not used.

UP to 10 meters (33 ft.) more when the CMA-7CE MIC OUT connector is used.

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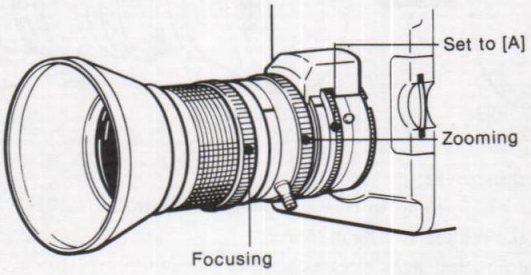
1-6. ADJUSTMENTS Proceed in the following sequence.

PREPARATIONS

(1) Switch on the power.
The viewfinder will light up after several seconds.
If it does not light, rotate the BRIGHT control clockwise.
(2) Detach the lens cap and point the camera at a suitable subject.
(3) Look into the viewfinder, perform zooming and focusing, so that a proper picture is obtained.

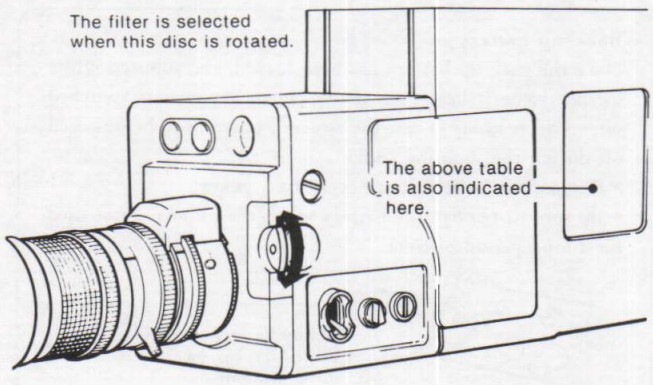


• Be sure to set the BARS/CAMERA switch to CAMERA.

COLOR TEMPERATURE CONVERSION FILTER

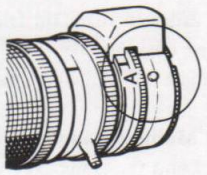
The color temperature changes in accordance with the light source that illuminates the subject. To compensate for changes in the color temperature, use the color temperature conversion filter according to the table below.

Filter	Lighting
0	Blind
1	Iodine lamp (3200°K), sunrise, sunset
2	Bright outdoors
3	Cloudy and rainy



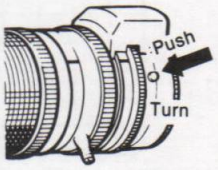
LENS OPENING ADJUSTMENT

AUTOMATIC adjustment



The camera's E-E lens and AGC circuit allows recording in the wide-range of illumination keeping the picture at the appropriate brightness.
The auto iris function of the lens works when the lens opening ring is set to A (AUTO).
It is recommended that the ring be kept **at [A] position usually.**

MANUAL adjustment



When producing special effects or recording people against a bright sky, for instance, or when taking heavily contrasted shots, manual adjustment is sometimes more effective.
With the auto release button depressed, turn the lens opening ring.
Refer to the table below.

Simple guide for outdoor use

The optimum lens opening may vary slightly in accordance with the type of subject and the shooting scene, etc. The table, however, serves **only as a general guideline.** When part of the picture is saturated, stop down the lens.

Recording condition	f number
Bright outdoors in spring and summer	8
Especially bright seaside in summer	8 – 16
Spring and summer shade	5.6
Fall and winter sunshine	5.6
Thin cloud	5.6
Cloudy	2.8
Rainy	2 – 1.4

When the subject illumination is known

Subject brightness (lux)	F number	
	With filter at [1]	With filter at [2] or [3]
1,000 or less	1.4	1.4
2,000	2.8	2
4,000	4	2.8
8,000	5.6	4
16,000	8	5.6
32,000	11	8
64,000	16	11
128,000 or more	16	16

The amount of light passing to the camera tube is reduced to about half when the color temperature conversion filter is set to [2] or [3.] Therefore, open the lens aperture by one stop as per the above table.

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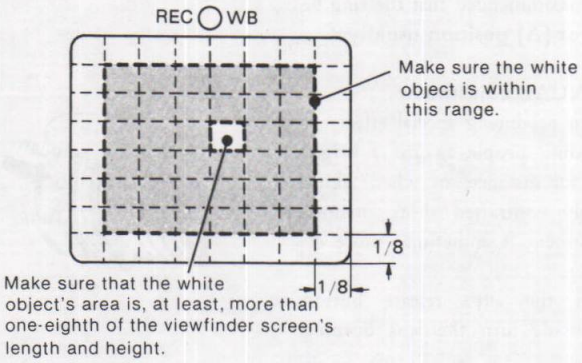
WHITE BALANCE ADJUSTMENT

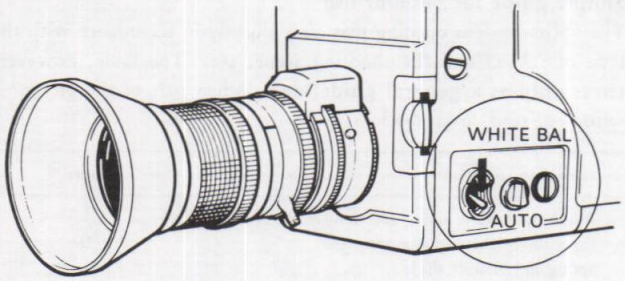
In order to maintain faithful color reproduction, the white balance must be adjusted.
Choose the adjusting method that suits the recording situation.

[I] Method using a white object

❶ Point the camera at a white object (white paper or white wall) near the subject so that it appears in the viewfinder. Zoom-in to maximum. The figure below shows the required white area.


REC WB
Make sure the white object is within this range.
1/8
1/8
Make sure that the white object's area is, at least, more than one-eighth of the viewfinder screen's length and height.

❷ Set the WHITE BAL switch to AUTO (lower position) and release.

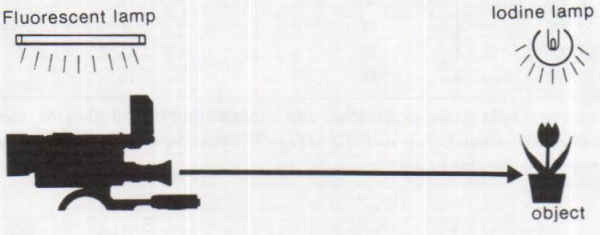


After a few seconds the red WB lamp (see previous figure) inside the viewfinder lights up and then goes off. The white balance has now been adjusted.

When the WB lamp does not light

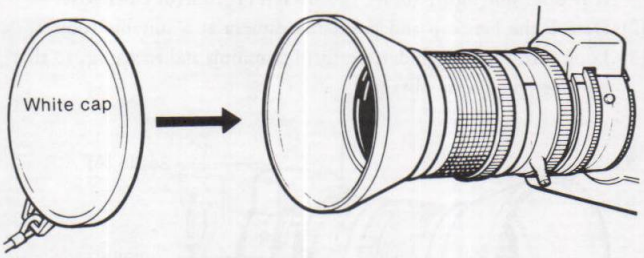
- Re-check the position of the color temperature conversion filter (see previous page).
- Set the BARS/CAMERA switch to CAMERA.
- If the lighting is insufficient, increase the illumination or increase the lens opening.

Bear in mind that the color temperature of the lighting on the object and that on the camera should be more or less identical and that there should be no extreme difference in lighting. For instance such as shown in the figure below, adjust the white balance with the lighting of the object (iodine lamp : conversion filter position 1).



[II] Method using the white cap

If no white object is available, use the white cap supplied to adjust the white balance.



Indoor adjustment

❶ Set the lens opening to f1.4 and place the white cap.
❷ Point the camera at a light source.
If the illumination light does not strike the white cap, bring the camera nearer the light source until it does.
❸ Set the WHITE BAL switch to AUTO and release. The adjustment is complete if the red WB lamp first lights up and then goes off.

Outdoor adjustment

❶ Adjust the lens opening approximately and place the white cap.
❷ Point the camera at the sky. Do not point it in the direction of the sun.
When shooting a near by sunny spot close or when shooting both shady and sunny spots together (or alternately), place the camera on the horizontal and allow the sunlight to enter the white cap diagonally.
❸ Set the WHITE BAL switch to AUTO and release. The adjustment is complete if the red WB lamp lights up first and then goes off.

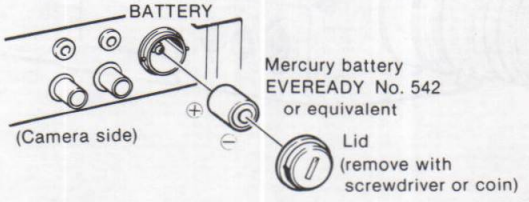
[III] Simple method

When the WHITE BAL switch is set to PRESET, (where the white balance at 3,200°K is obtained,) the recording under any color temperature is possible.
To start recording soon after the camera is moved from the outdoor to indoor, set the WHITE BAL switch to PRESET, and the color temperature conversion filter to [1].

Back-up battery

Once the back-up battery has been loaded, the adjusted white balance value is held even if the camera's power is switched off. This is handy in case the camera's power is to be switched off during the shooting session.

- Replace the battery about every **two years.**
- Be sure to remove the battery when the camera is not used for a long period of time.



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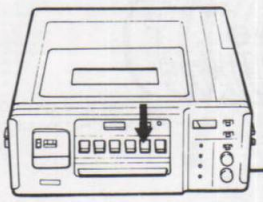
1-7. OPERATION

PORTABLE USE

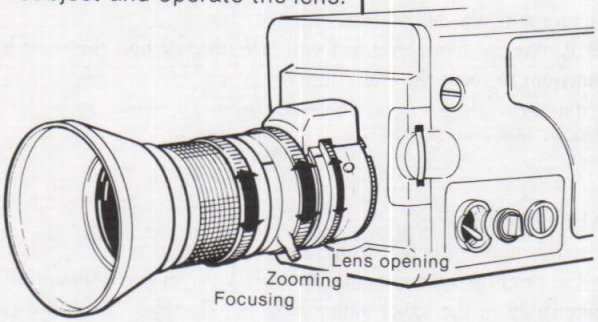
When the camera is used with a portable VTR.

❶ Turn on the power to the equipment and set the VTR to the stand-by mode.

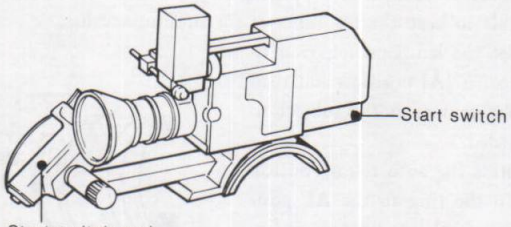


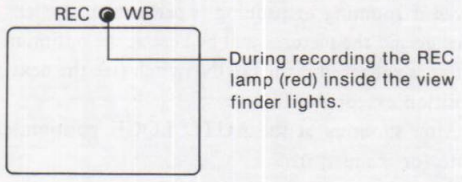
Depress the REC or the REC and PLAY buttons. Exactly which buttons are pressed depends on the individual model, so refer to the VTR's instruction manual.

❷ Point the camera at the subject and operate the lens.



❸ Recording starts once the start switch is pressed. When it is pressed again, recording stops.



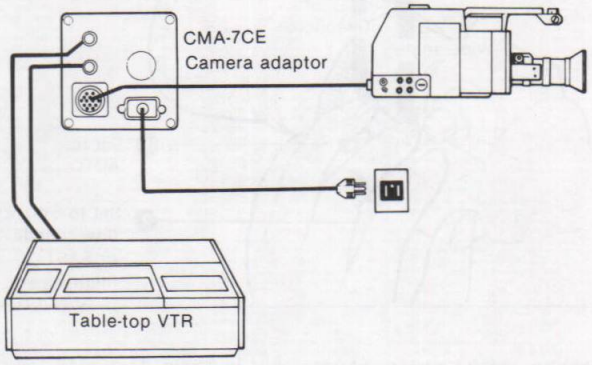


Set the FADE TIME knob to [0], when the picture at the start of recording is black.

• Upon completion of the recording, depress the STOP button on the VTR and set the camera's lens opening to C (closed).

USE WITH TABLE -TOP VTR

When the camera is used with an ordinary table-top VTR for indoor shooting, etc.

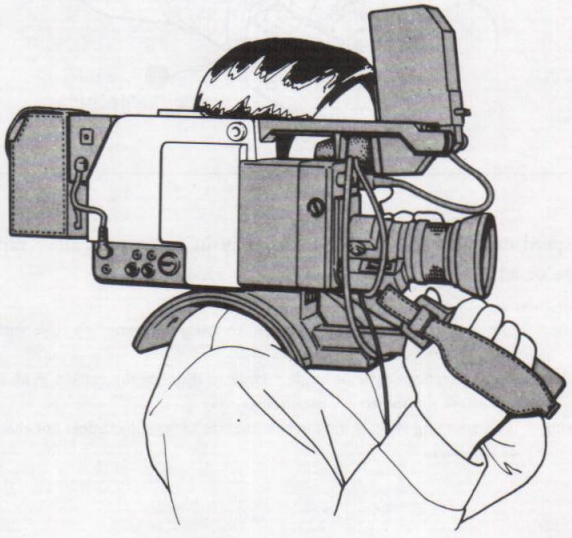


The camera's start switch, REC lamp, BATT lamp and EARPHONE jack do not work.
Use the function button on the VTR to start and stop the tape transportation.
Use a video monitor to monitor the playback pictures.
Other operations are the same as those of the portable VTR.

• If the viewfinder is not necessary, it may be detached.

HOLDING THE CAMERA

Place the camera on your right shoulder, hold the hand grip firmly with your right hand, and grip the camera steadily.
Look through the viewfinder with your right eye and operate the lens with your left hand.



• Place the camera horizontally when laying it down.
• Do not hold the viewfinder and allow the camera to be suspended in the air.

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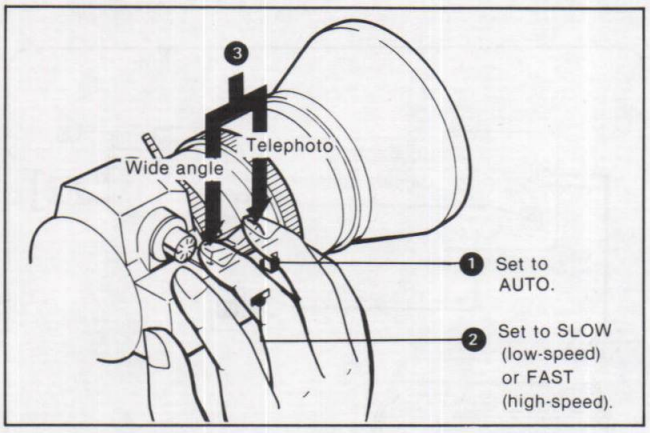
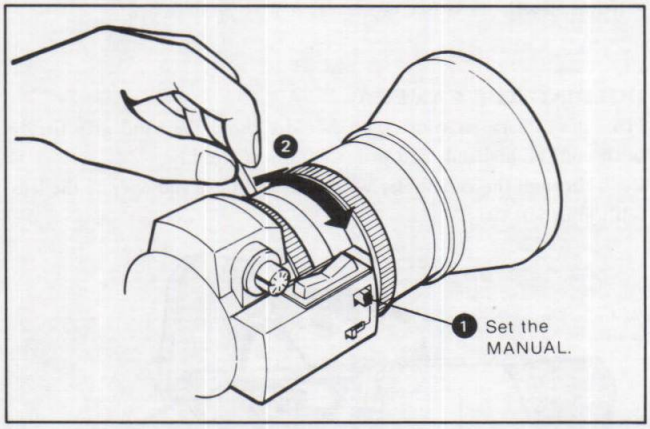
ZOOMING

Motorized zoom



Zooming can be performed smoothly in about 11 seconds at the SLOW position and about 4.5 seconds at the FAST position between telephoto and wide angle (and vice versa).
Operation ❸ in the above figure can be performed with the zoom button on the brace.

Manual zoom



The speed can be freely adjusted manually in order to achieve rapid change or an effect designed to shock the viewer.

Tips on zooming

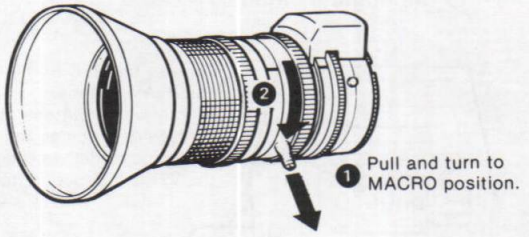
Zoom in : From wide angle to telephoto. Used to bring the viewer up close with a subject which is far-off.

Zoom out : From telephoto to wide angle. Used to distance the subject gradually and show the subject's surroundings.

Following : This zooming effect is used so that the size of the subject does not change as it moves.

CLOSE-UPS

The close-up or macro function can be used for taking album-like shots or shooting small details. The minimum distance from the lens to the subject is 20 mm.



❶ Set the manual zoom lever to the wide-angle side, pull the lever and turn the zoom ring to MACRO.
❷ Adjust the distance between the subject and camera to obtain the picture with the desired size.
❸ Rotate the zoom lever to focus. (With close-ups, the zoom lever functions to focus the lens.)

• If the focusing ring is set to ∞ beforehand, focusing is continuously possible from the close-up position to ∞ by rotating the zoom lever.

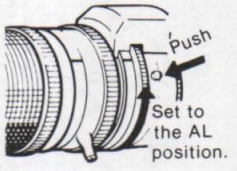
AUTO LOCK

Use this position is following case.

• The brightness surrounding the subject changes even though the illumination of the actual subject does not change.
• The f-number changes greatly with extensive zooming or panning.

The lens opening is automatically adjusted in line with the changes in the illumination in the auto iris mode and so the subject comes out dark. However, if the lens opening ring is set to AUTO LOCK, it is possible to keep the f-number at the optimum value.

First, set the lens opening ring to the auto iris [A] position and then point the camera at the subject to be recorded.
Now press the auto release button and turn the ring to the AL position so that the lens opening is fixed to this condition.



Even if zooming or panning is performed, the lens opening will not change and the pictures will be kept at the optimum brightness. The effect is enhanced if the GAIN switch (see the next page) is set to any position except AUTO.

• After shooting at the AUTO LOCK position, return the ring to auto (or manual) iris.

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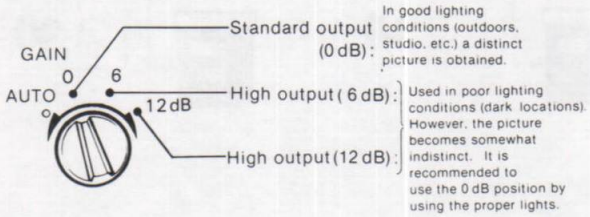
VIDEO OUTPUT SELECTION

The video output level (brightness) can be varied with the GAIN switch. **It is normally set to the AUTO position.** The AGC (automatic gain control) circuit is activated and the pictures are kept at the optimum brightness.

In the following cases, better effects are produced if the switch is set to a position other than AUTO :

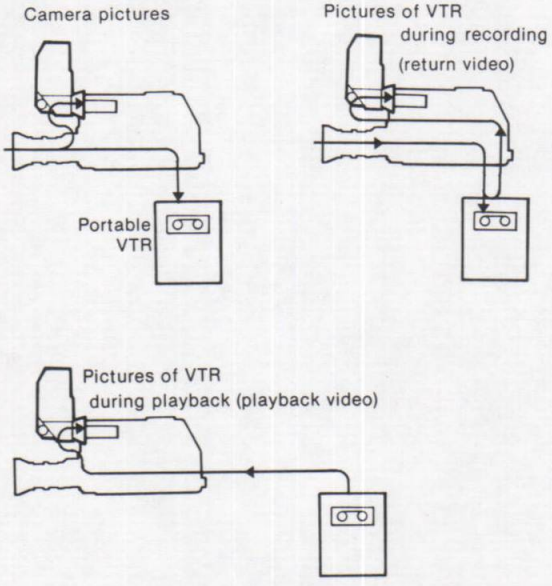
—When shooting a bright picture in a bright place or a dark picture in a dark place.

—When the picture is too dark during zooming or panning even though the lens opening ring is set to AL.

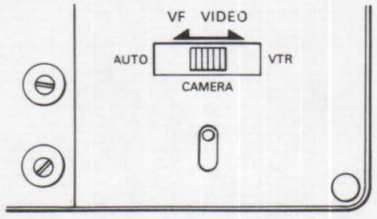

GAIN
AUTO
0
6
12dB
Standard output (0dB) :
In good lighting conditions (outdoors, studio, etc.) a distinct picture is obtained.
High output (6dB) :
High output (12dB) :
Used in poor lighting conditions (dark locations). However, the picture becomes somewhat indistinct. It is recommended to use the 0dB position by using the proper lights.

MONITORING THE PICTURE

When the camera and VTR are connected by the camera cable, three different pictures can be seen on the viewfinder as in the figure below. The playback video is a particularly handy function to check immediately the picture quality to be recorded on location.


Camera pictures
Pictures of VTR during recording (return video)
Portable VTR
Pictures of VTR during playback (playback video)

The pictures that can be monitored differ in accordance with the VF VIDEO switch setting and VTR used, as shown in the table below.

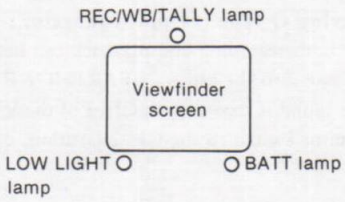


VF VIDEO switch setting.	VTR with Q-type (14-pin) connector	VTR with J-type (10-pin) connector
AUTO (left) (normal position)	Selection is automatic. (the camera picture during recording and the playback video during playback.	Selection is completely automatic no matter where the switch is set. ●Camera's picture during recording (The return video is viewed when the camera is operated with the battery pack.) ●Playback video during playback (The camera's picture is viewed during playback when the camera is operated by the battery pack, and when the tape with nothing recorded is played back.)
VTR (right)	picture from the VTR is shown during recording and playback. Return video during recording playback video during playback.	
CAMERA (center)	Camera picture is shown during recording and playback.	

- The picture can be seen with the eyecup up.
- Refer to the VTR's instruction manual for details on the playback.

ALARM LAMPS

During recording, the red lamps inside the viewfinder warn the operator of the followings :



REC/WB/TALLY lamp

Recording display

The lamp lights to indicate recording as soon as the tape starts running by the camera's start switch.

With a VTR having Q type (14-pin) connector, the lamp blinks for several seconds until the servo system locks, and lights after the start of recording.

Faulty VTR operation

The REC lamp blinks when the SERVO, TAPE END and AUTO OFF alarm lamps on the VTR with the Q type (14-pin) connector light to indicate that the VTR has been operated incorrectly.

White balance display

The lamp lights as soon as the WHITE BAL switch is set to AUTO and after several seconds it goes off.

Tally display

When the camera is used with the CCU-1800 camera control unit (in studio use), the lamp functions as the tally lamp.

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LOW LIGHT lamp

This red lamp lights to warn that the camera's video output level is too low (although it is still possible to operate the camera and record the dark pictures).

The lamp may light because :

- The subject's illumination (lighting) is insufficient.
  To remedy, increase the amount of light.
- The lens is stopped down too much (with manual iris adjustment).
  To remedy, either increase the lens opening or change to AUTO iris.
- The amplifier's gain is too low. To remedy, select the GAIN switch position.

BATT lamp

When the camera is operated with the battery adaptor, this lamp blinks several minutes before the battery is completely discharged to warn that its life is virtually over. If the battery is used further, the camera will automatically shut down and the lamp will go off.

When VTR with a BATTERY alarm lamp (and Q-type connector) is being operated on a battery, the lamp will blink in the same way several minutes before the battery in VTR is completely discharged. If the battery is used further, the VTR will automatically shut down and the lamp will go off.

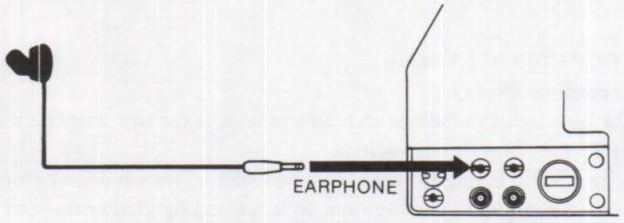
- Refer to the instruction manual of the VTR concerned since the BATT lamp works in a slightly different way according to the model.

AUDIO MONITOR

With a VTR having Q type (14-pin) connector :

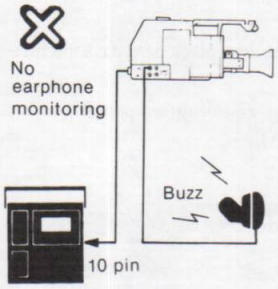
The audio during both recording and playback can be monitored by plugging an earphone into the camera's EARPHONE jack.

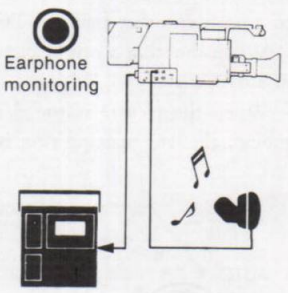
The microphone's sound is recorded on CH-2 of the VTR, so set the VTR's audio monitor switch to the CH-2 position.



With a VTR having J-type (10-pin) connector :

The audio can be monitored with an earphone while the camera is being operated with the DC-6 battery adaptor. In all other cases, a buzzing noise will be heard in the earphone but this does not indicate a malfunction. In cases like this, plug the earphone into the EARPHONE jack on the VTR.





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MICROPHONE

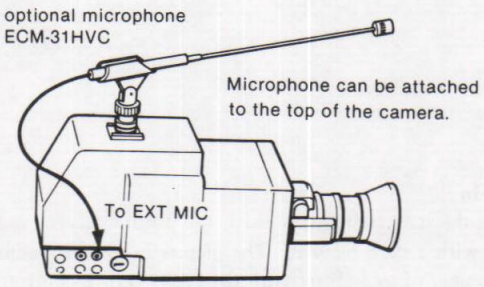
Built-in microphone :

When the camera cable is connected to a portable VTR, the built-in microphone is also connected automatically, and it is possible to record audio along with the video recording.

External microphone :

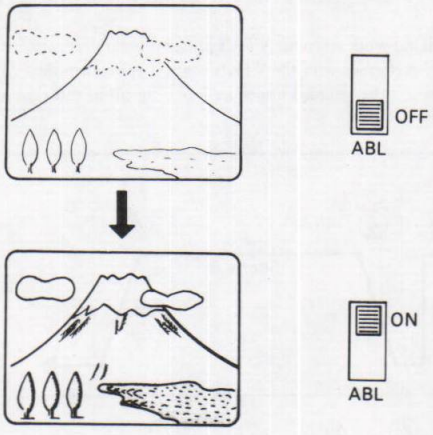
Use external microphone if the noise made while handling the camera is a problem or if the person being recorded wants to hold a microphone. The external microphone is automatically selected when inserted into the EXT MIC jack. For best results, the microphone should be brought as close to the sound sources as possible.

Some types of microphones will pick up a buzzing noise when brought near the camera. In cases like this, put it at a slight distance from the camera.



AUTOMATIC BLACK LEVEL ADJUSTMENT

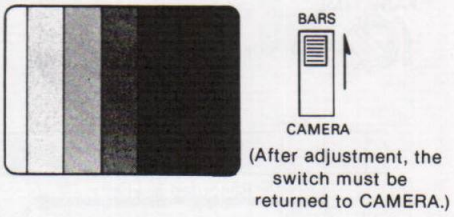
If the ABL switch is set to ON when the whole picture is whitish, such as when recording on a clear day, the white level is kept unchanged while the gray-to-black level is reduced appropriately and a well-contrasted picture is obtained. **Set the switch to OFF during normal recording.**



COLOR BAR SIGNALS

When the BARS/CAMERA switch is set to BARS, color bar signals are obtained as the camera output. Use these for adjusting the video monitor when connected.

The color of the monitor picture can vary greatly depending on how the video monitor's COLOR control is set, so before monitoring, use the bar signal and adjust this control properly.



FILTER ATTACHMENT

When using the ND (neutral density) filter to adjust the incident light, remove the lens hood first and then attach the filter. The filter screw diameter is 58 mm.

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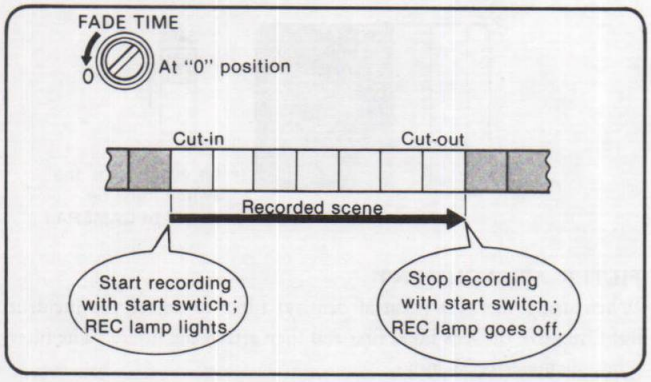
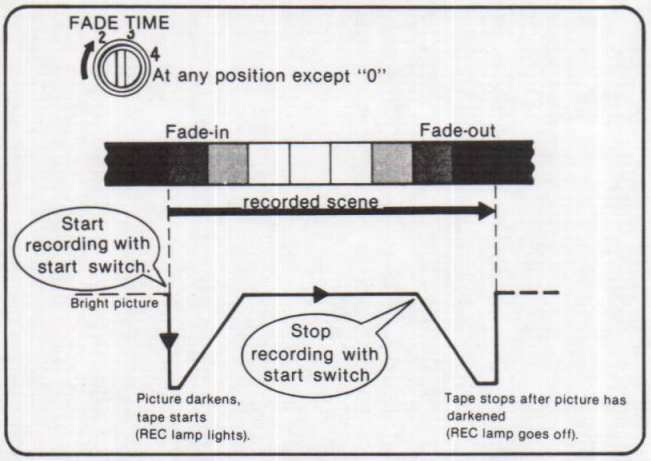
FADER

Continuity in recording can be obtained with cut-in, cut-out, fade-in and fade-out (if the FADE TIME control is operated) when the camera is used with a VTR (with a back space editing function such as the VO-4800PS) which yields precise continuity in recording. It is also possible to create pictures with exciting variations.
Fade effects are not produced satisfactorily with other types of VTRs.



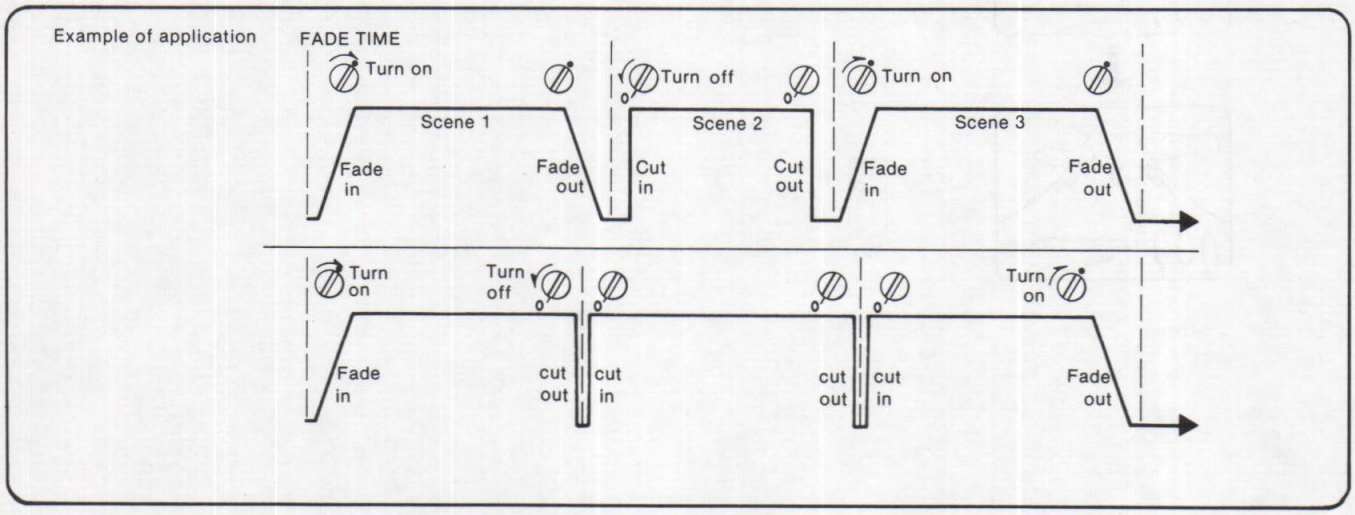
The figure on the left shows the normal recording process. If the start switch is pressed, continuity (no picture disturbance at junction) is maintained among the pictures recorded from scene to scene.
In this case, the start of recording is known as **"cut-in"** and the completion of recording as **"cut-out."**



Fade-in :
When the start switch is pressed, the picture darkens and recording starts with a dark picture. The picture brightens gradually within the number of seconds set with the FADE TIME control, and recording continues. (Preset the fade time before recording).

Fade-out
When the start switch is pressed again, the picture darkens in the number of seconds set with the FADE TIME control, and several seconds later, the REC lamp goes off and recording stops. At the same time, the picture returns to normal brightness and the VTR is set to the pause mode.

Note : The numbers (2, 3, 4) on the FADE TIME control are rough approximations of seconds.
The fader will not work when the VTR's pause button is depressed. If start and stop operations are performed with the VTR's controls even when the FADE TIME control has been set, the recorded scenes are linked by cut-in and cut-out, not fades.



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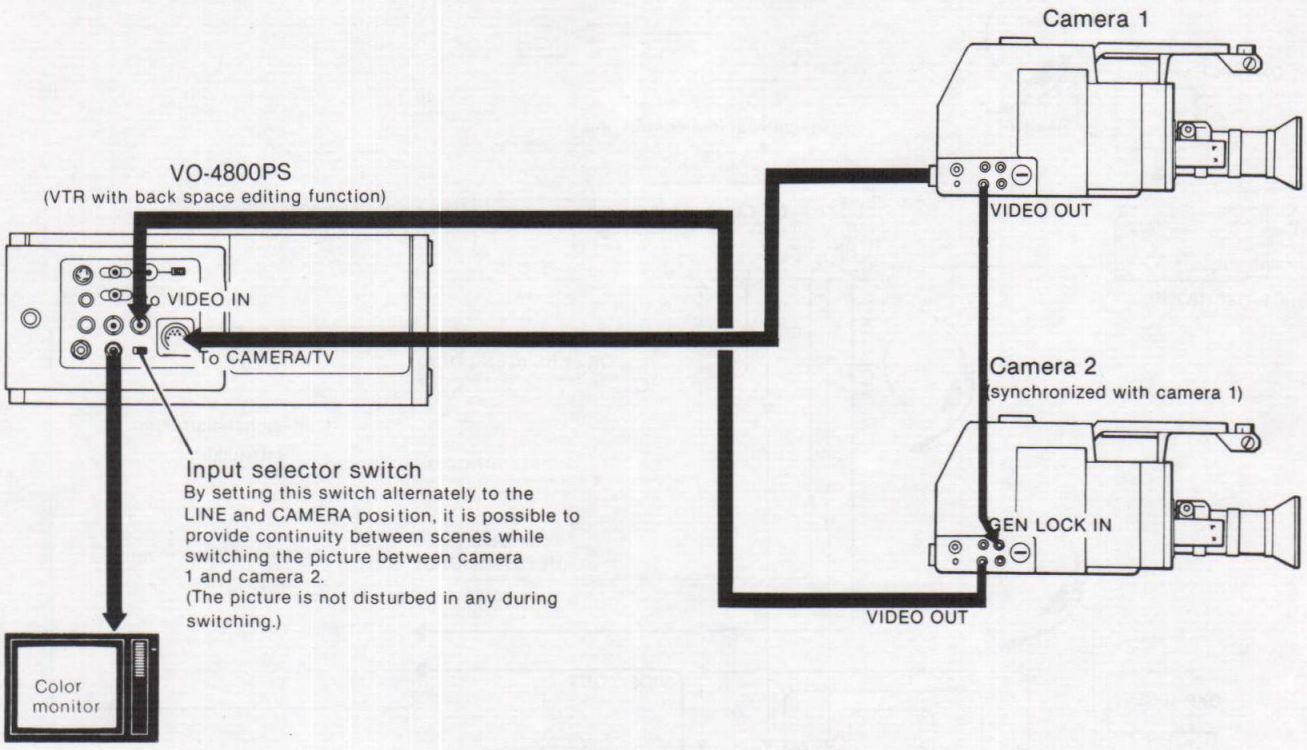
GEN-LOCK

When a BS or VBS (normal PAL) signal is fed from an external source into the GEN-LOCK IN connector, the camera operates synchronizing with that signal. Use this function when employing two cameras, for instance.


Camera 1
VIDEO OUT
VO-4800PS
(VTR with back space editing function)
To VIDEO IN
To CAMERA/TV
Camera 2
(synchronized with camera 1)
GEN LOCK IN
VIDEO OUT
Input selector switch
By setting this switch alternately to the LINE and CAMERA position, it is possible to provide continuity between scenes while switching the picture between camera 1 and camera 2.
(The picture is not disturbed in any during switching.)
Color monitor

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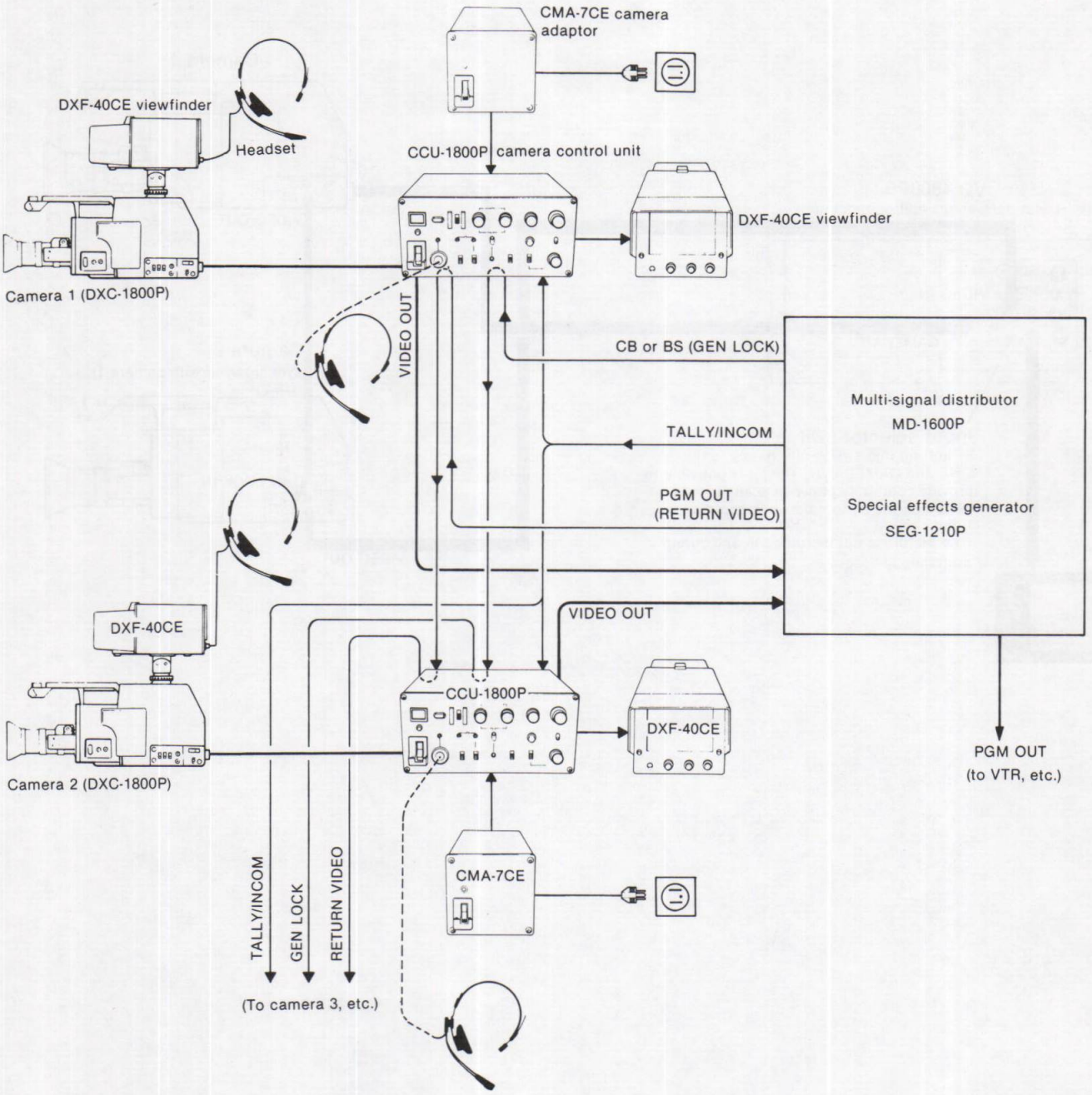
1-8. STUDIO USE

When using a multiple number of cameras simultaneously in a video studio, a special effects generator (such as the SEG-1210P) for wiping and switching, a multi-signal distributor (such as the MD-1600P) for synchronized driving of the cameras, and the CCU-1800P camera control unit for aligning the picture quality and color of all the cameras are required. Furthermore, the DXF-40CE studio viewfinder also comes in handy. The figures below give a example of studio system.

SYSTEM EXAMPLE



Note: A normal picture may not be obtained if the return video signal is used for the gen-lock signal when configuring a studio system.

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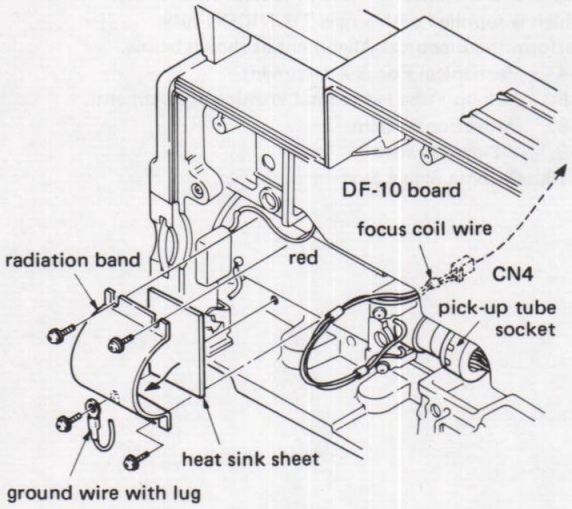
SECTION 2
REPLACEMENT OF PICK-UP TUBE

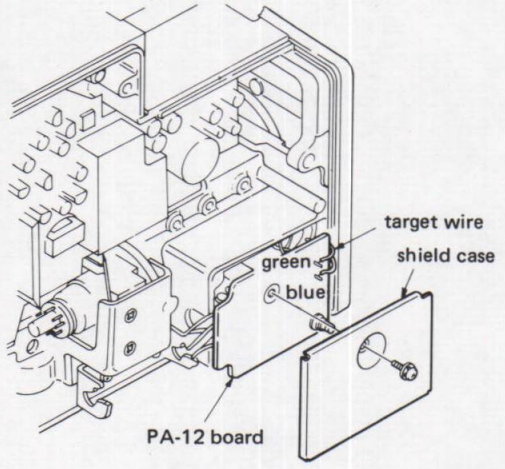
2-1. REMOVAL OF PICK-UP TUBE

STEP 1.



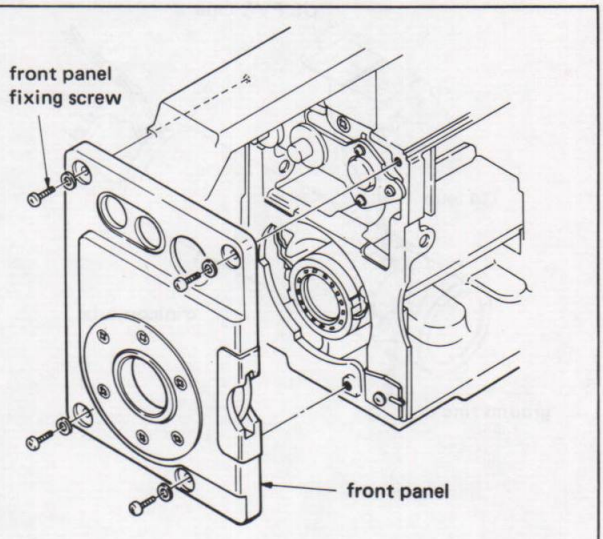
1. Disconnect the connector CN4 of the focus coil wire from DF-10 board.
2. Disconnect the pick-up tube socket from TRINICON tube.
3. Remove the four fixing screws which are holding the radiation band, then remove the radiation band and the heat sink sheet.

STEP 2.



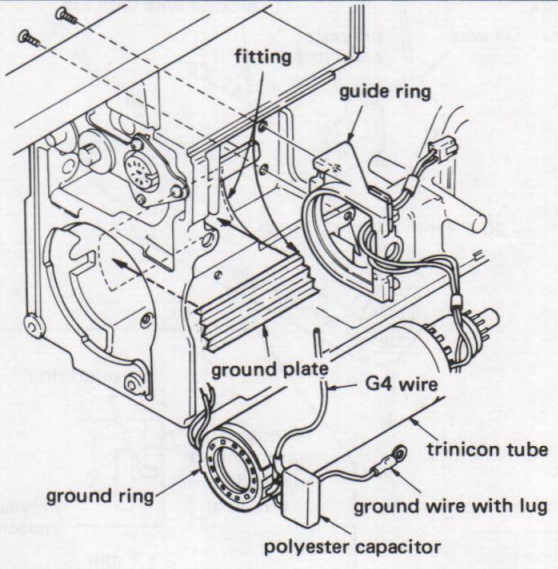
1. Remove the shield case, then unsolder the green-colour wire and blue-colour wire from PA-12 board.

STEP 3.



1. Remove the four fixing screws and remove the front panel.

STEP 4.



1. Remove the guide ring and remove the TRINICON tube.
2. Remove the polyester capacitor, ground wire with lug, G4 wire (capacitor side) and ground ring (in front of TRINICON tube) by unsoldering.

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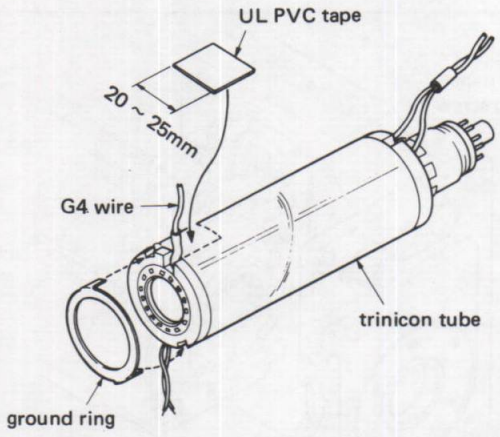
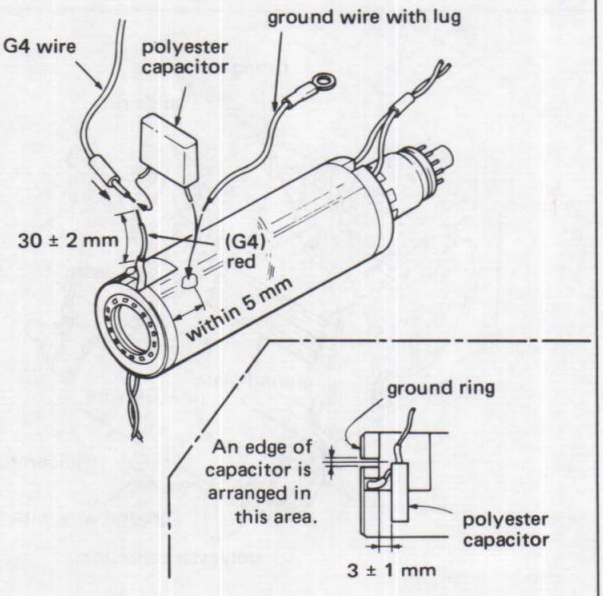
2-2. INSTALLATION OF PICK-UP TUBE

STEP 1.



1. Install the ground ring on a new TRINICON tube by soldering, where the ring was removed in step 4.
2. Stick a UL PVC tape on the TRINICON tube as shown above figure.

STEP 2.



1. Mount the polyester capacitor, ground wire with lug and G4 wire by reversing the step 4.

STEP 3.

1. Re-install a TRINICON tube by reveasing the steps.
2. Replace the Timer on CR-11 board with a new Timer which is supplied with a new TRINICON tube.
3. Perform the Electrical Alignment as shown below.
   - 3-4. Mechanical Focus Adjustment
   - 3-5. Pick-up Tube Horizontal Position Adjustment
   - 3-8. Deflection System
   - 3-9. Y Signal System
   - 3-10. Chroma Signal System

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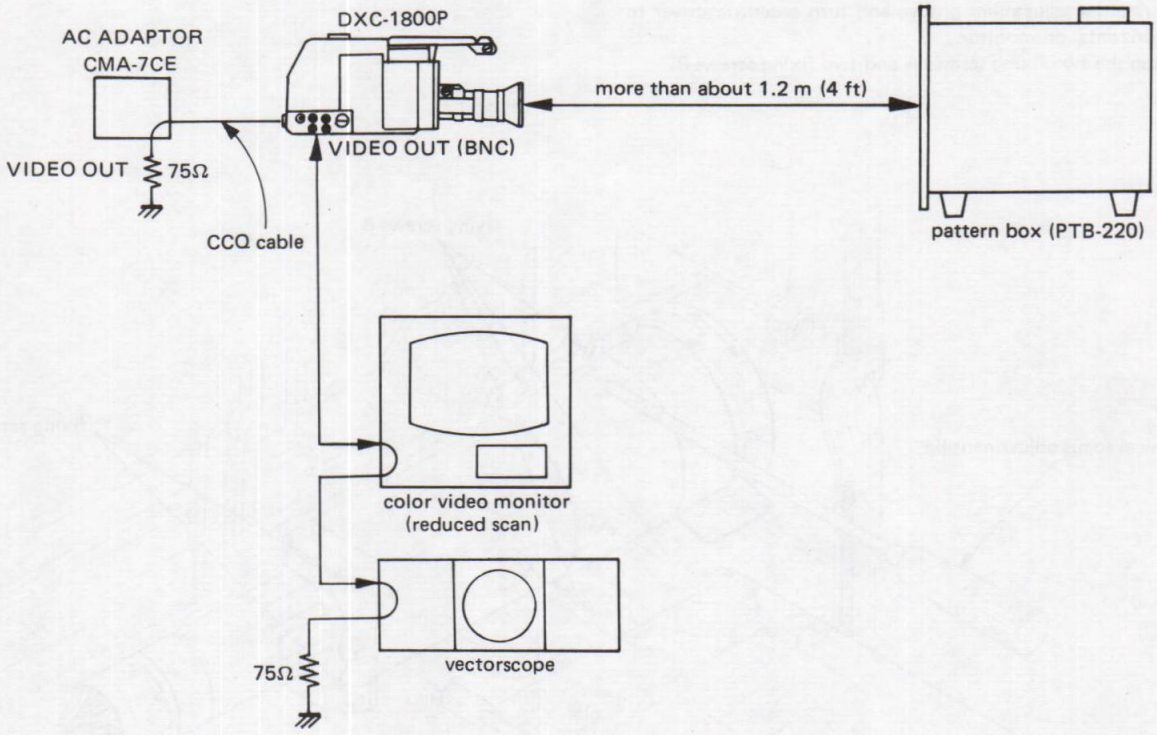
SECTION 3
ALIGNMENT

3-1. EQUIPMENT REQUIRED

1. Mechanical focus adjustment jig : Sony parts No. J-6020-170-A
2. 4.5 MHz oscillator jig : Sony parts No. J-6023-420-A
3. Pattern box, PTB-100(90 ~ 130 Vac) : Sony parts No. J-6020-490-A
   PTB-220(190 ~ 240 Vac) : Sony parts No. J-6020-680-A
4. Red filter : Sony parts No. J-6020-500-A
5. Sony specified vector scale : Sony parts No. J-6022-070-B
6. Eccentric screw driver : Sony parts No. J-6040-070-A
7. AC adaptor, CMA-7CE
8. Colour video monitor (reduced scan)
9. Dual trace oscilloscope
10. Vectorscope
11. Frequency counter
12. Volt ohm meter (VOM) or Digital volt meter
13. Yellow filter (KODAK WRATTEN FILTER No.9)

3-2. CONNECTION



3-3. INITIAL SETTING OF CAMERA

1. Allow 20 minutes warm-up before measurement.
2. Set the switchs and controls in the following positions, unless otherwise specified.

FILTER	: 1
WHITE BAL	: PRESET
GAIN	: 0 dB
FADE TIME	: fully counterclockwise position
ABL	: OFF
BARS/CAMERA	: CAMERA
SC PHASE	: 0°

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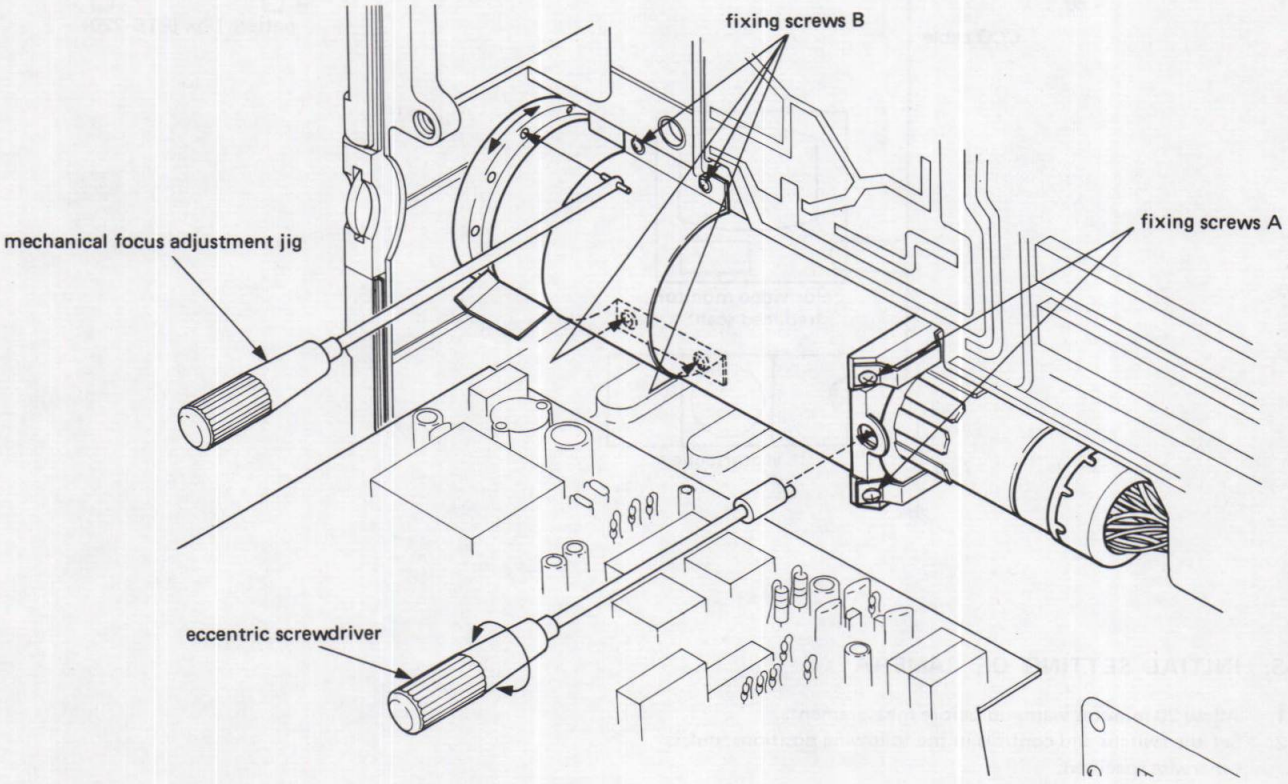
3-4. MECHANICAL FOCUS ADJUSTMENT

1. Loosen six fixing screws A and B.
2. Set the iris ring to F1.4.
3. Set the zoom lever to the telephoto position.
4. Turn the focus ring until a subject at about 3 meters from the lens is in focus. A subject with fine detail is desirable.
5. Set lens to wide and turn mechanical focus adjustment ring to get best focus on the monitor.
6. Repeat step 2 ~ step 5 several times.
7. Tighten six fixing screws and make sure that, focus does not changed while zooming.

3-5. PICK-UP TUBE HORIZONTAL POSITION ADJUSTMENT

1. Prepair horizontal object and set camera for horizontal with it.
2. Loosen the two fixing screws A and two fixing screws B (upper side of the four screws B). Install eccentric screwdriver in horizontal adjustment groove and turn eccentric driver to get horizontal on monitor.
3. Tighten the two fixing screws A and two fixing screws B.



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3-6. POWER SUPPLY SYSTEM

3-6-1. 9.5 V Regulator Adjustment

Equipment : VOM
Test point : TP1 (GND: TP16)/DF-10 board
Adj point : RV1/PW-53 board
Spec : 9.5 ± 0.1 V dc

3-6-2. 9 V Regulator Adjustment

Equipment : VOM
Test point : TP10 (GND: TP16)/DF-10 board
Adj point : RV2/PW-53 board
Spec : 9.0 ± 0.1 V dc

3-6-3. 5.1 V Regulator Adjustment

Equipment : VOM
Test point : TP11 (GND: TP16)/DF-10 board
Adj point : RV9/DF-10 board
Spec : 5.1 ± 0.05 V dc

3-6-4. −5 V Regulator Adjustment

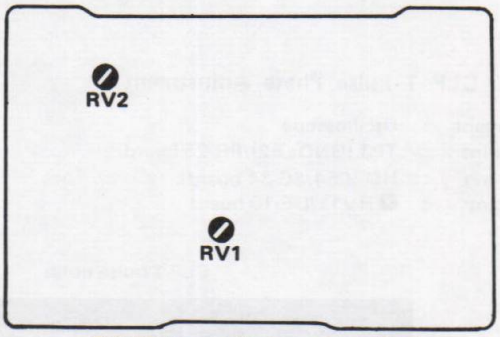
Equipment : VOM
Test point : TP12 (GND: TP16)/DF-10 board
Adj point : RV10/DF-10 board
Spec : −5.0 ± 0.05 V dc

3-7. SYNC GENERATOR SYSTEM

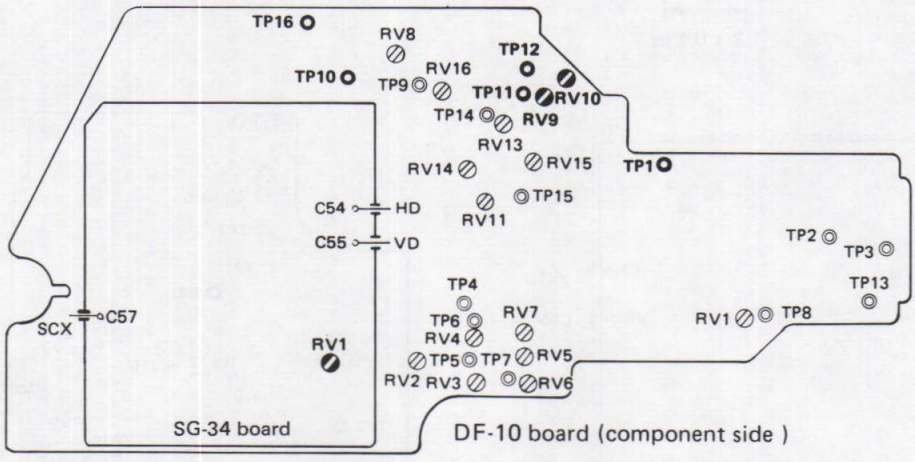
3-7-1. Sub-carrier Frequency Adjustment

Note:
- Allow 20 minutes warm-up before measurement.
- Be sure that GEN LOCK IN terminal is not connect with a connector.

Equipment : Frequency counter
Test point : C57 (GND: sealed case)/SG-34 board
Adj point : RV1/SG-34 board
Spec : 4433618 ± 5 Hz



PW-53 board (component side)



DF-10 board (component side)

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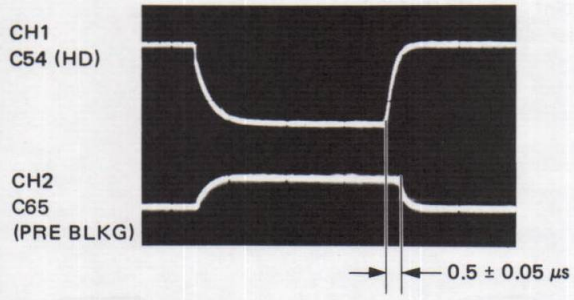
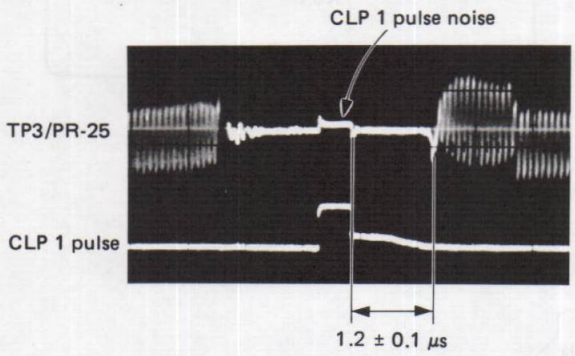
3-7-2. PRE BLKG Width Adjustment

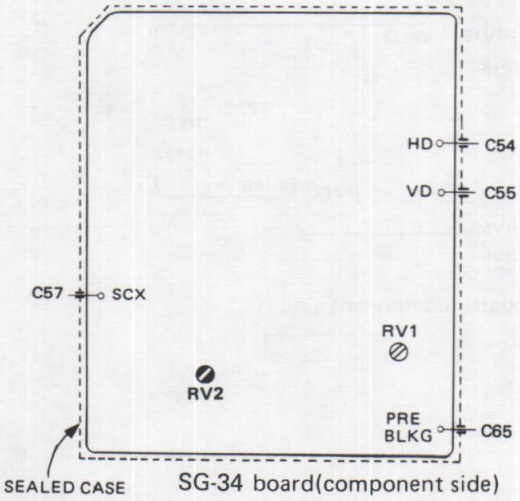
Equipment : Dual trace oscilloscope
Test point : C54 (GND: sealed case)/SG-34 board
C65 (GND: sealed case)/SG-34 board
Scope trig : HD (C54/SG-34 board)
Adj point : ◐ RV2/SG-34 board



3-7-3. CLP 1 Pulse Phase Adjustment

Equipment : Oscilloscope
Test point : TP3 (GND: E2)/PR-25 board
Scope trig : HD (C54/SG-34 board)
Adj point : ◐ RV11/DF-10 board





SG-34 board(component side)

3-8. DEFLECTION SYSTEM

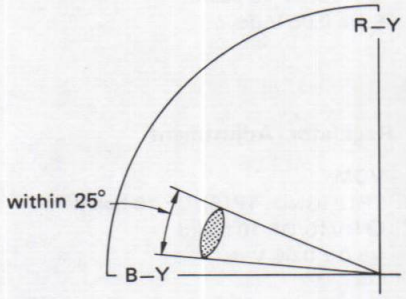
3-8-1. Target Voltage Adjustment

Equipment : VOM
Test point : TP8 (GND: TP16)/DF-10 board
Adj point : ◐ RV1/DF-10 board
Spec : 51 ± 1 V dc

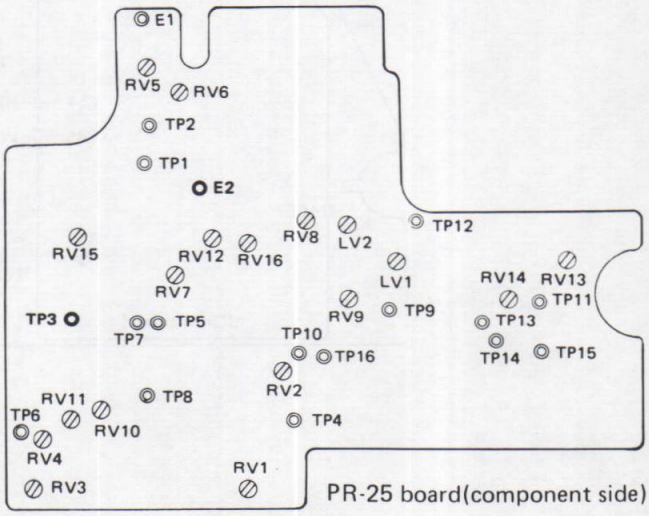
3-8-2. E Focus Adjustment

Note: This adjustment and 3-9-1. Beam adjustment mutually affect earch other. Consequently, when performing these adjustments, alternately repeat the two adjustments several times to obtain the desired spec.

Object : All white pattern (pattern box "AUTO")
Lens : Iris F4
cover the lens with yellow filter
Equipment : Vectorscope
Adj point : ◐ RV16/DF-10 board
Adjustment : Minimize the size of bright spot



Note: Proceed to Sec. 3-8-5, Sec. 3-8-6, Sec. 3-8-7, and Sec. 3-10-9 after E Focus Adj. is complete.



PR-25 board(component side)

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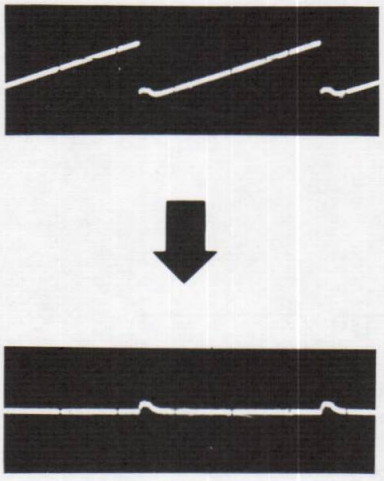
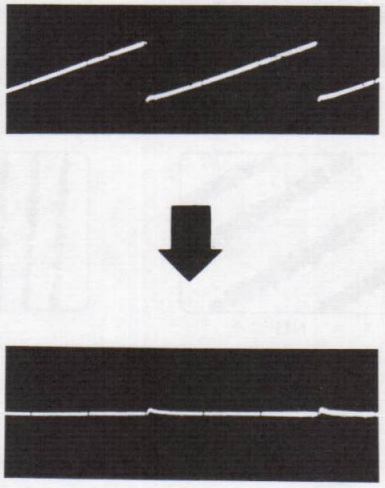
3-8-3. H Deflection Balance Adjustment

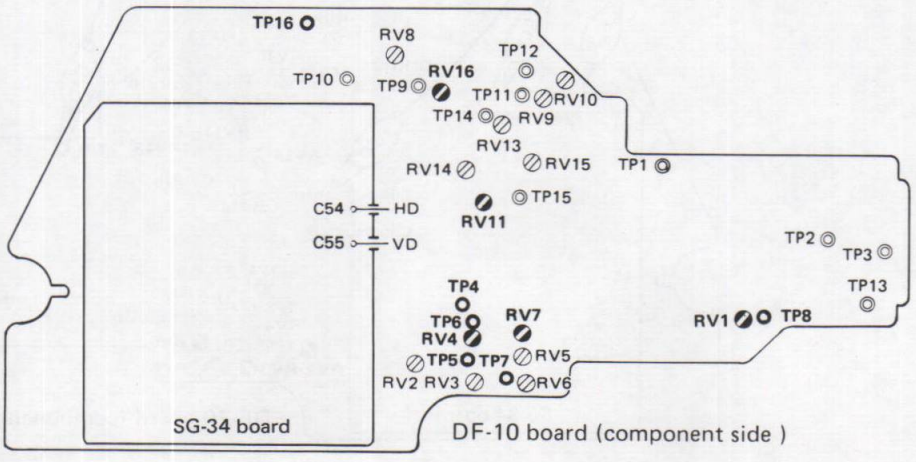
Equipment : Dual trace oscilloscope
confirm calibration of CH1 and CH2
Test point : CH1 TP4 (GND: TP16)/DF-10 board
CH2 TP5 (GND: TP16)/DF-10 board
Scope mode : ADD
Scope trig : HD (C54/SG-34 board)
Adj point : ◐ RV4/DF-10 board



3-8-4. V Deflection Balance Adjustment

Equipment : Dual trace oscilloscope
confirm calibration of CH1 and CH2
Test point : CH1 TP6 (GND: TP16)/DF-10 board
CH2 TP7 (GND: TP16)/DF-10 board
Scope mode : ADD
Scope trig : VD (C55/SG-34 board)
Adj point : ◐ RV7/DF-10 board





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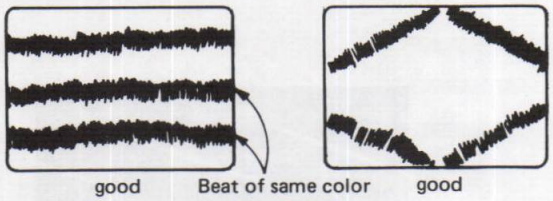
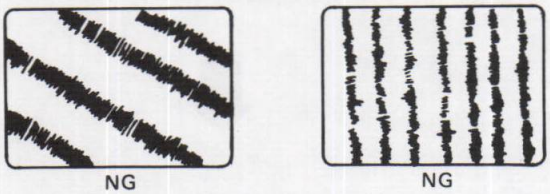
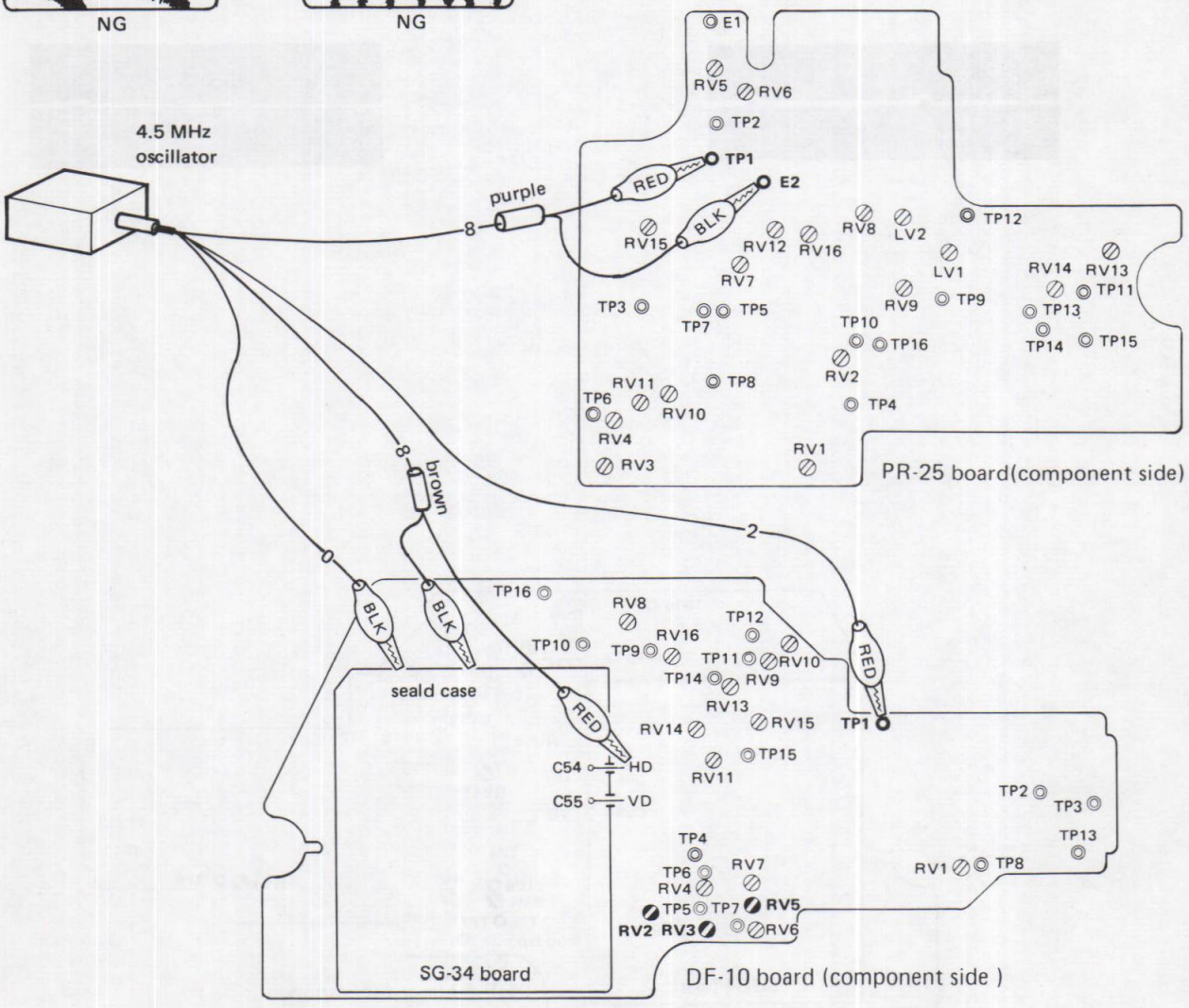
USE FOR JIG (J-6020-180-A)

3-8-5. H Deflection Size Adjustment

Lens : Iris C
Equipment : Connect the 4.5 MHz oscillator as shown
Adj point : ◐ RV2/DF-10 board
Spec : The number of the same colour beats must be less than 6 lines.







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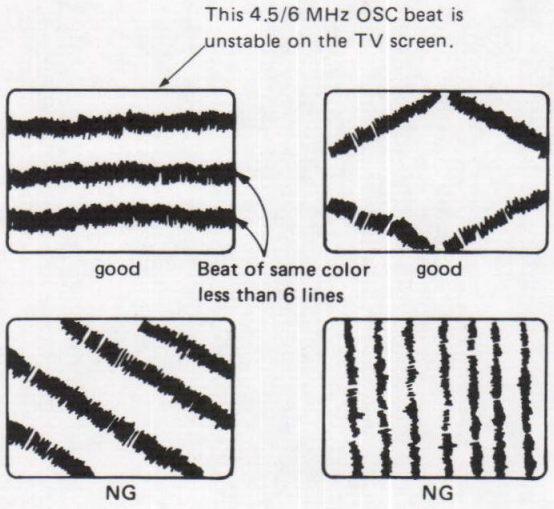
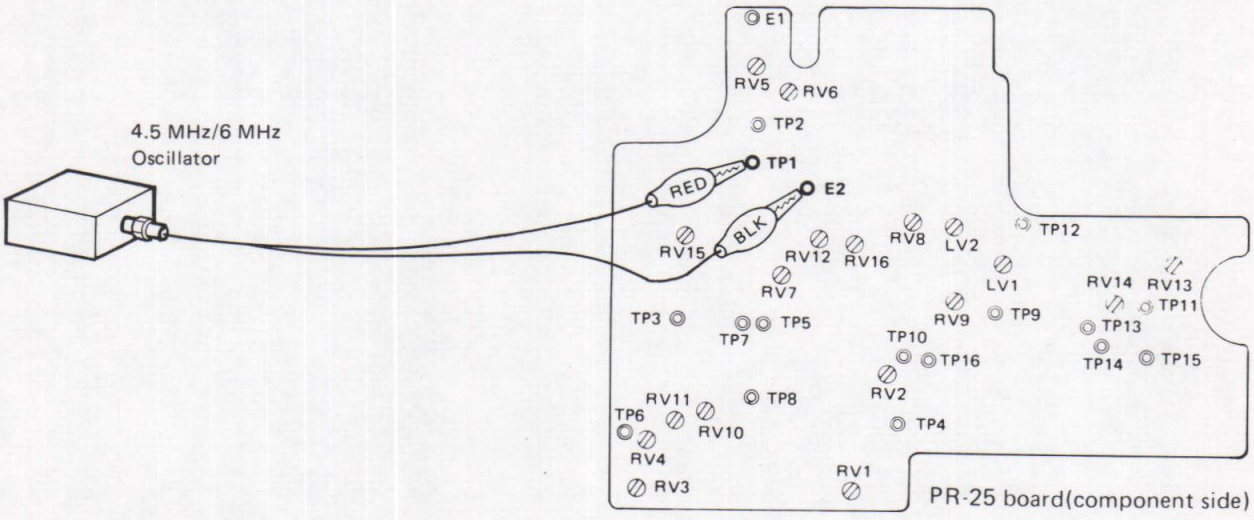
USE FOR JIG (J-6023-420-A)

3-8-5. H Deflection Size Adjustment

Note: Set a 4.5/6 MHz Oscillator jig to 4.5 MHz. Connect a red alligator clip to TP1/PR-25 board and a black alligator clip to E2/PR-25 board.

Lens : Iris C
Equipment : Connect the 4.5 MHz oscillator as shown
Adj point : ◐ RV2/DF-10 board
Spec : The number of the same colour beats must be less than 6 lines.





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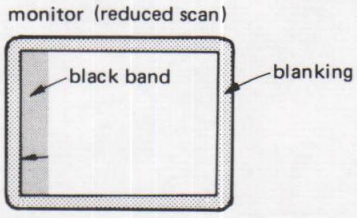
3-8-6. H Centering Adjustment

Note: Perform the Sec. 3-8-5. H Def. Size Adj. before this adjustment.

Object : All white pattern
Lens : Iris F5.6
Equipment : Oscilloscope
Test point : TP1 (GND: E2)/PR-25 board
Scope trig : HD (C54/SG-34 board)
Adj point : ◐RV3/DF-10 board

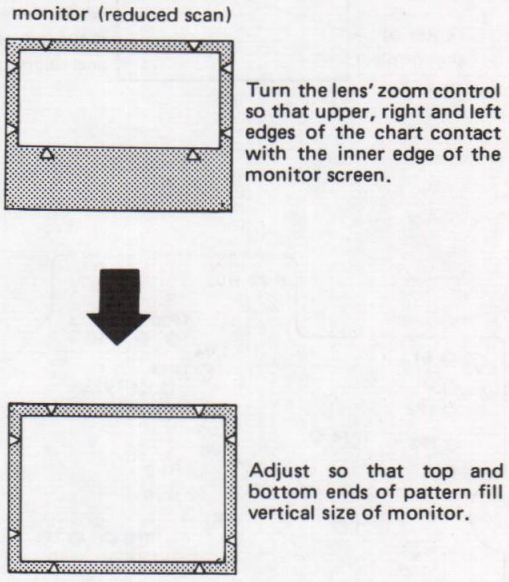
Adjust : 1. Turn RV3/DF-10 board fully counterclockwise ↶, then a vertical black band is appeared on the left side of the monitor.
Turn RV3/DF-10 board gradually clockwise until a vertical black band is disappeared on the blanking of reduced scan monitor screen.



3-8-7. V Deflection Size Adjustment

Note: • Perform the Sec. 3-8-5. Horizontal Size Adjustment and 3-8-6. H Centering Adj. before the V Deflection Size Adjustment.
• Make sure that the specification in Sec. 3-8-8. is almost satisfied.

Object : Pattern box
Lens : Iris F5.6
Equipment : Monitor TV (reduced scan)
Adj point : ◐RV5/DF-10 board


monitor (reduced scan)
Turn the lens' zoom control so that upper, right and left edges of the chart contact with the inner edge of the monitor screen.
Adjust so that top and bottom ends of pattern fill vertical size of monitor.

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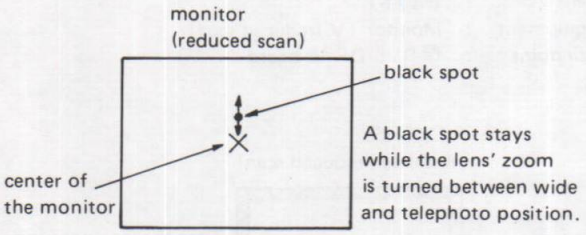
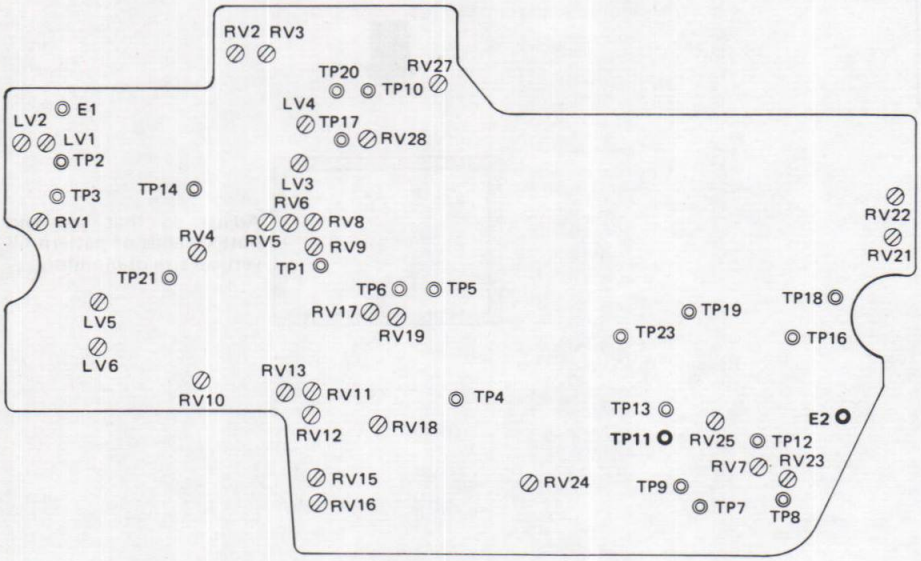
3-8-8. V Centering Adjustment

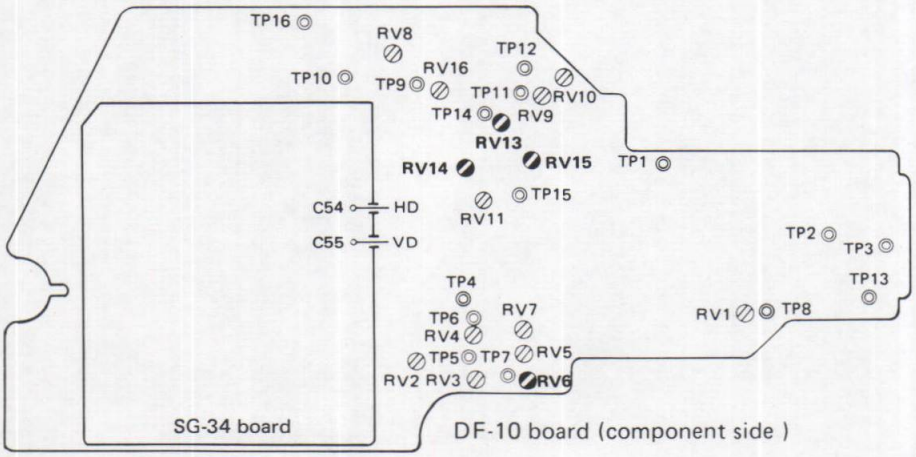
Note: Perform the Sec. 3-8-7. V Deflection Size Adj. before this adjustment.

Object : A black spot on white background
Equipment : Monitor TV (reduced scan)
Adj point : ◐ RV6/DF-10 board


monitor
(reduced scan)
black spot
A black spot stays while the lens' zoom is turned between wide and telephoto position.
center of the monitor



CR-11 board(component side)



DF-10 board (component side)

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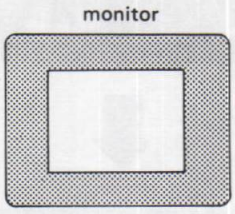
3-9. Y SIGNAL SYSTEM

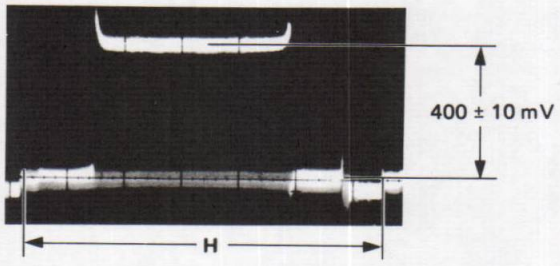
3-9-1. Beam Adjustment

Note:
- Perform the Sec. 3-8-1. Target Voltage Adjustment, before the Beam Adjustment.
- This adjustment and Sec. 3-8-2. E Focus Adj. mutually affect earch other. Consequently, when performing these adjustments, alternately repeat the two adjustments several times to obtain the desired spec.
- Avoid continuous shooting of a subject in strong light when the lens' iris is open.

Object : White pattern (pattern box "AUTO")



Lens : Iris F1.4
Equipment : Oscilloscope
Test point : TP1 (GND: E2)/PR-25 board
Scope trig : HD (C54/SG-34 board)
Preparation : Set the RV14/DF-10 board to the fully clockwise position. (ABO GAIN = 0)
Adj point : ⊘RV15/DF-10 board

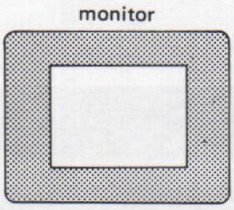


Note: Set the RV14/DF-10 board to the fully counterclockwise position after Beam Adj. is complete.

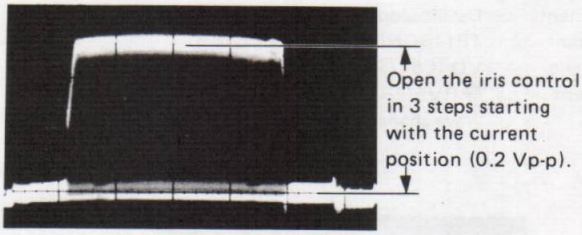
3-9-2. ABO γ Correction Adjustment

Note: Check that RV14/DF-10 board is fully counterclockwise position.

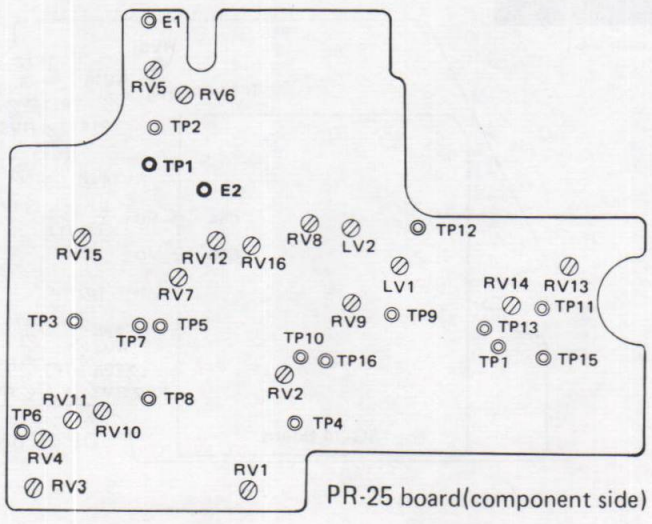
Object : White pattern (pattern box "AUTO")



Lens : Iris F1.4
Equipment : Oscilloscope
Test point : TP1 (GND: E2)/PR-25 board
Scope trig : HD (C54/SG-34 board)
Adj point : ⊘RV13/DF-10 board



Note: Check to see that a beat noise is not appeared on a white pattern of the monitor screen when the lens' iris is turned C←→F1.4. If not, adjust RV13/DF-10 board.



PR-25 board(component side)

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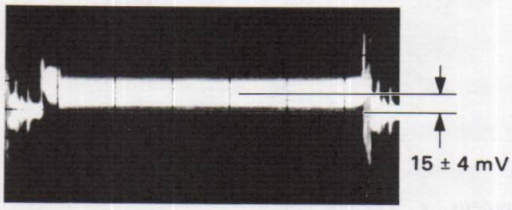
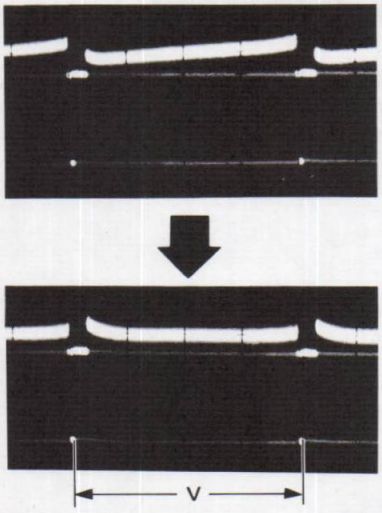
3-9-3. Bias Light Adjustment

Lens : Iris C
Equipment : Oscilloscope
Test point : TP1 (GND: E2)/PR-25 board
Scope trig : HD (C54/SG-34 board)
Adj point : ◐ RV8/DF-10 board



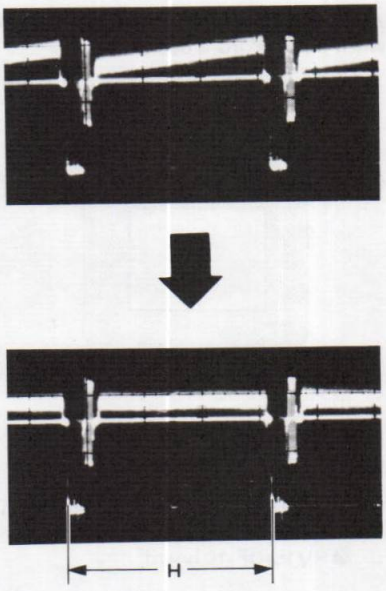
3-9-4. V Shading Correction Adjustment

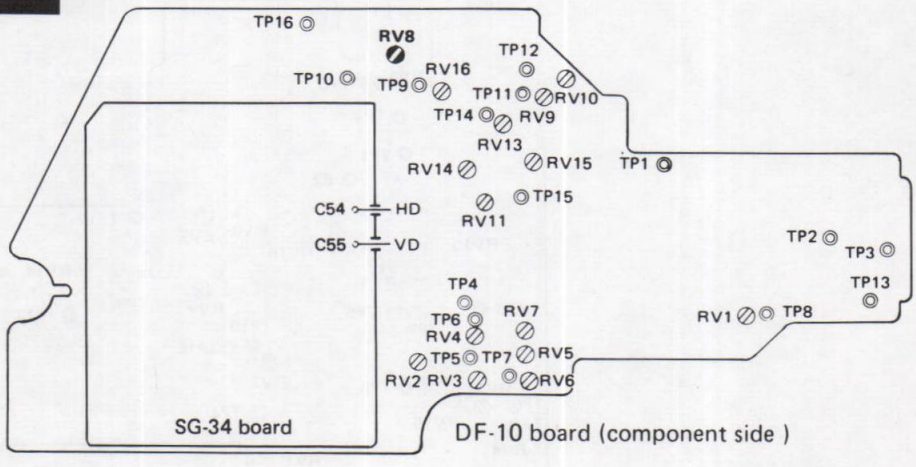
Lens : Iris C
Equipment : Oscilloscope
Test point : TP11 (GND: E2)/CR-11 board
Scope trig : VD (C55/SG-34 board)
Adj point : ◐ RV5/PR-25 board
Adjust : Wave shape should be horizontally flat.



3-9-5. H Shading Correction Adjustment

Lens : Iris C
Equipment : Oscilloscope
Test point : TP11 (GND: E2)/CR-11 board
Scope trig : HD (C54/SG-34 board)
Adj point : ◐ RV6/PR-25 board
Adjust : Wave shape should be horizontally flat.





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3-9-6. Black Level Adjustment

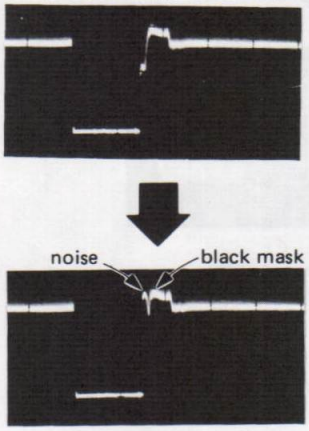
Lens : Iris C
Equipment : Oscilloscope
Scope trig : HD (C54/SG-34 board)
Adj point : ◐ RV15/PR-25 board

SER NO. up to 10630 (AEP)
up to 50030 (UK)

Note: Perform the Sec. 3-9-11. V DTL Adjustment and Sec. 3-9-12. Y Line Crawl Adjustment, before the Black Level Adjustment.

Adjust RV15/PR-25 board so that the noise level is the same as black mask level.

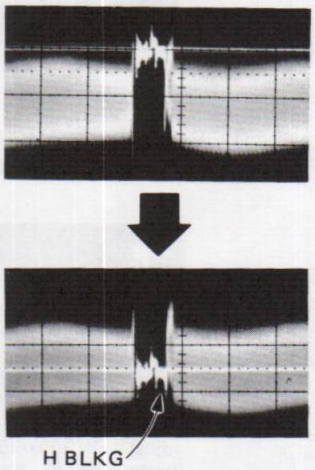
TP16 (GND: E2)/PR-25 board

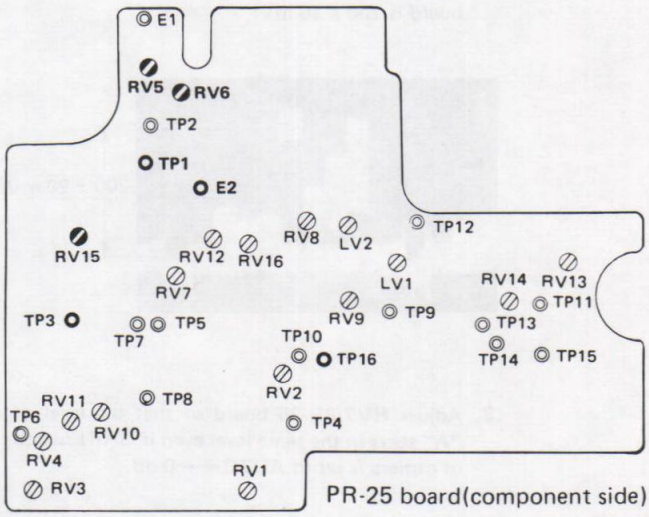


SER NO.10631 and higher (AEP)
50031 and higher (UK)

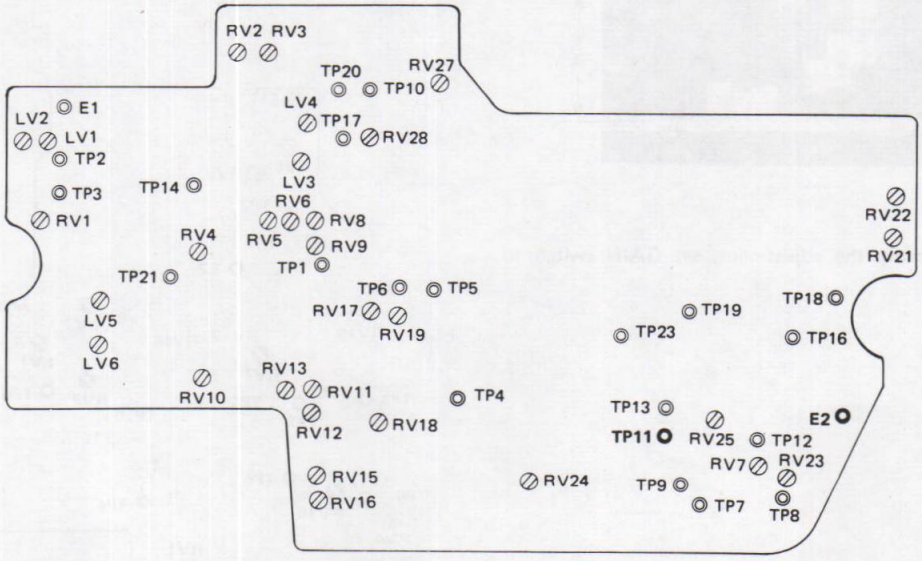
Adjust RV15/PR-25 board so that the H BLKG is positioned in the center of video P-P level.

TP3 (GND: E2)/PR-25 board





PR-25 board(component side)



CR-11 board(component side)

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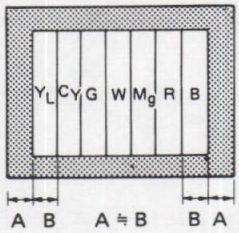
3-9-7. AGC Adjustment

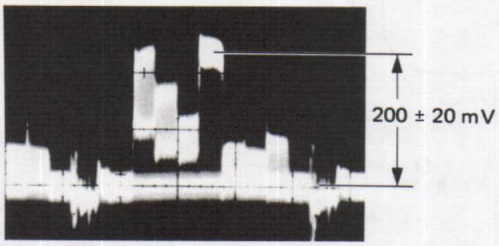
Object : Colour-bar pattern as shown

monitor (reduced scan)

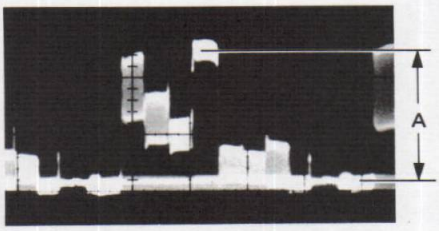


Equipment : Oscilloscope
Test point : TP7 (GND: E2)/PR-25 board
Scope trig : HD (C54/SG-34 board)
Adj point : ◐ RV7/PR-25 board

Adjust : 1. Adjust lens' iris so that the level at TP1/PR-25 board is 200 ± 20 mV.



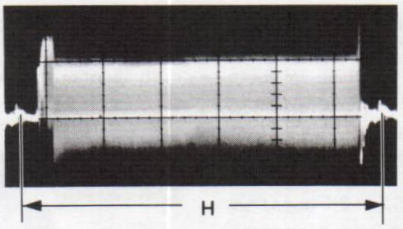
2. Adjust RV7/PR-25 board so that the level of "A" stays in the same level even if GAIN switch of camera is set to AUTO ↔ 0 dB.

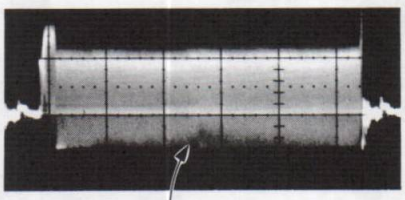


Note: After completing the adjustment, set GAIN switch to 0 dB position.

3-9-8. Chroma γ Correction Adjustment

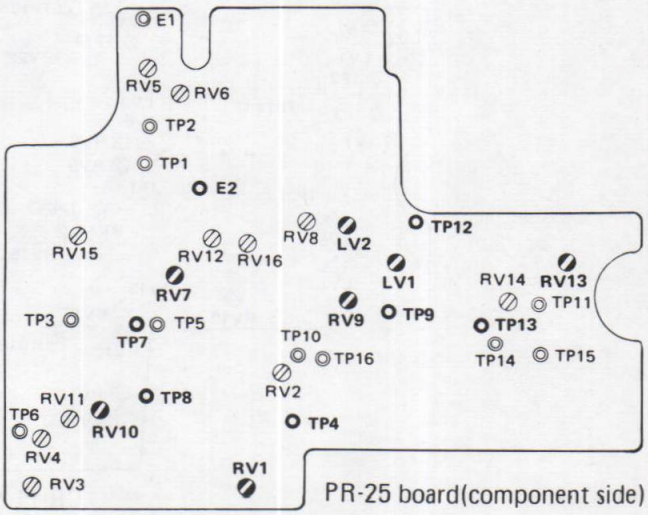
Camera : GAIN SW "6 dB" position
Lens : Iris C
Equipment : Oscilloscope
Test point : TP8 (GND: E2)/PR-25 board
Scope trig : HD (C54/SG-34 board)
Adj point : ◐ RV9/PR-25 board





adjust RV9/PR-25 board until lower side of the waveform is clipped.

Note: After completing the adjustment, set GAIN switch to 0 dB position.



PR-25 board(component side)

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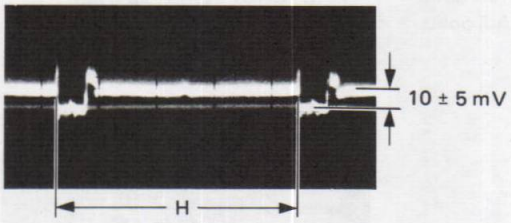
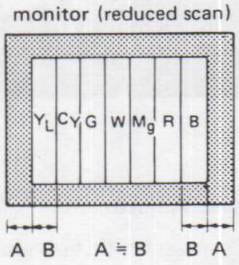
3-9-9. BLKG Slice Level Adjustment

Lens : Iris C
Equipment : Oscilloscope
Test point : TP9 (GND: E2)/PR-25 board
Scope trig : HD (C54/SG-34 board)
Adj point : ◐ RV10/PR-25 board

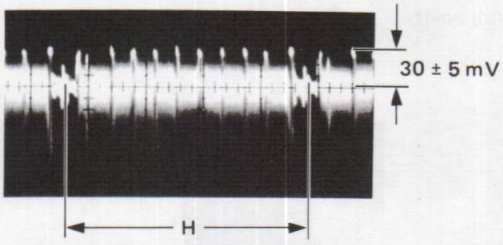


3-9-10. H DTL Adjustment

Object : Colour-bar pattern as shown

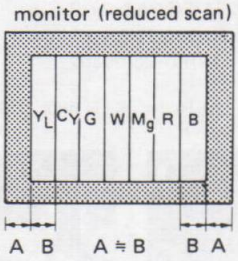


Lens : Iris F4
Equipment : Oscilloscope
Test point : TP4 (GND: E2)/PR-25 board
Scope trig : HD (C54/SG-34 board)
Adj point : ◐ RV1/PR-25 board



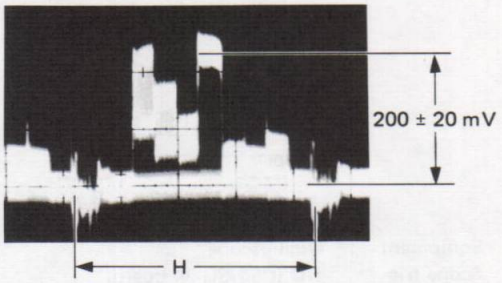
3-9-11. V DTL Adjustment

Object : Colour-bar pattern as shown

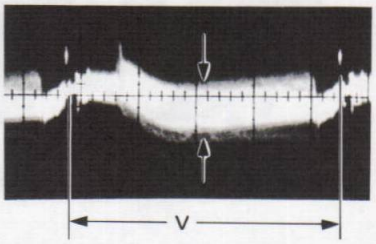


Equipment : Oscilloscope
Test point : TP13 (GND: E2)/PR-25 board
Scope trig : VD (C55/SG-34 board)
Adj point : ◐ RV13/PR-25 board
◐ LV1, LV2/PR-25 board

Adjust : 1. Adjust lens' iris so that the level at TP1/PR-25 board is 200 ± 20 mV.



2. Adjust LV1 and LV2/PR-25 board for minimum amplitude at TP13/PR-25 board.



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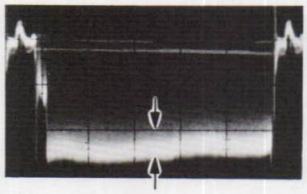
3-9-12. Y Line Crawl Adjustment

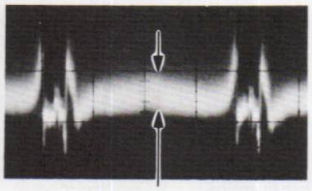
Camera : GAIN SW "6 dB" position
Lens : Iris C
Equipment : Oscilloscope
Scope trig : HD (C54/SG-34 board)
Test point : TP5 (GND: E2)/PR-25 board
Adj point : ◐ RV14/PR-25 board

SER NO. up to 10630 (AEP)
up to 50030 (UK)



minimize the amplitude

SER NO. 10631 and higher (AEP)
50031 and higher (UK)

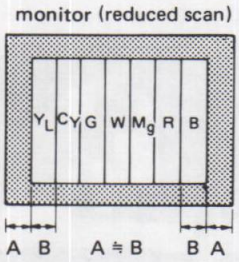


minimize the amplitude

Note: After completing the adjustment, set GAIN switch to 0 dB position.

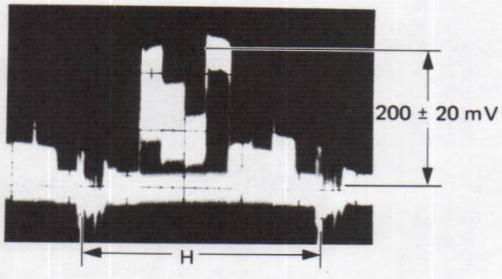
3-9-13. Knee Adjustment

Object : Colour-bar pattern as shown

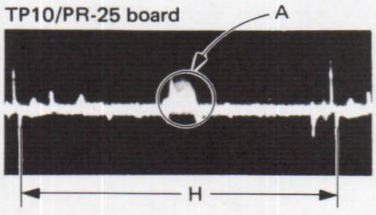


Equipment : Oscilloscope
Scope trig : HD (C54/SG-34 board)
Adj point : ◐ RV2/PR-25 board

Adjust : 1. Adjust lens' iris so that the level at TP1/PR-25 board is 200 ± 20 mV.

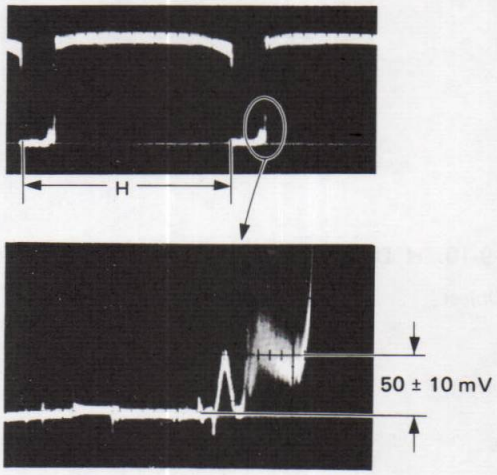


2. Adjust RV2/PR-25 board until "A" waveform is appeared.



3-9-14. Pre Pedestal Level Adjustment

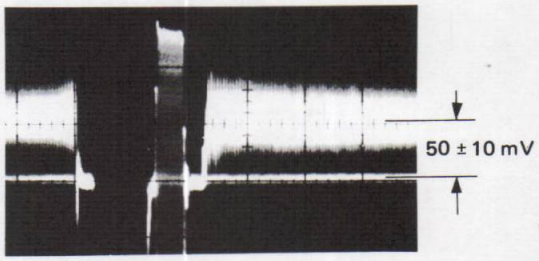
Lens : Iris F4
Object : All white pattern
Equipment : Oscilloscope
Preparation : Disconnect CN2 connector/PR-25 board and connect a short wire between the centre pin of CN2 and GND (E2).
Test point : TP16 (GND: E2)/PR-25 board
Adj point : ◐ RV12/PR-25 board



3-9-15. Pedestal Level Adjustment

Note:
- Perform the Sec. 3-9-14. Pre Pedestal Level Adj. before the Pedestal Level Adj.
- Pedestal Level Adj. and 3-9-16. Y Level Adj. mutually affect earch other. Consequently, when performing these adjustments, alternately repeat the two adjustments several times to obtain the desired spec.

Lens : Iris C
Equipment : Oscilloscope
Test point : TP11 (GND: E2)/CR-11 board
Scope trig : HD (C54/SG-34 board)
Adj point : ◐ RV3/PR-25 board



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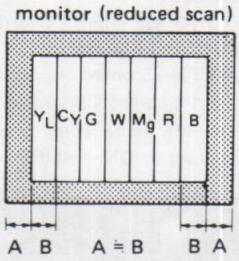
3-9-16. Y Level Adjustment

Note: Perform the Sec. 3-9-15. Pedestal Level Adj. before the Y Level Adj.

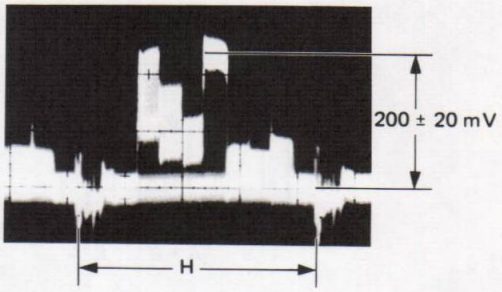
Object : Colour-bar pattern as shown

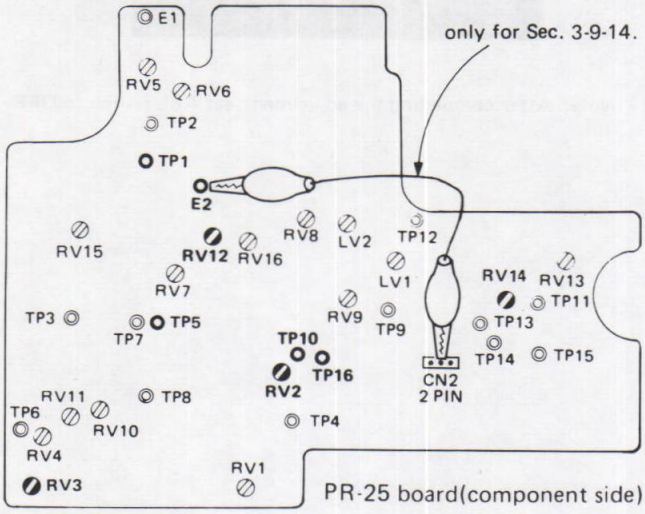


Equipment : Oscilloscope
Test point : TP11 (GND: E2)/CR-11 board
Scope trig : HD (C54/SG-34 board)
Adj point : ◐ RV17/CR-11 board

Adjust : 1. Adjust lens' iris so that the level at TP1/PR-25 board is 200 ± 20 mV.

TP1/PR-25 board

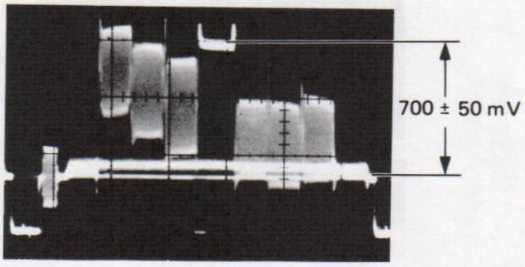


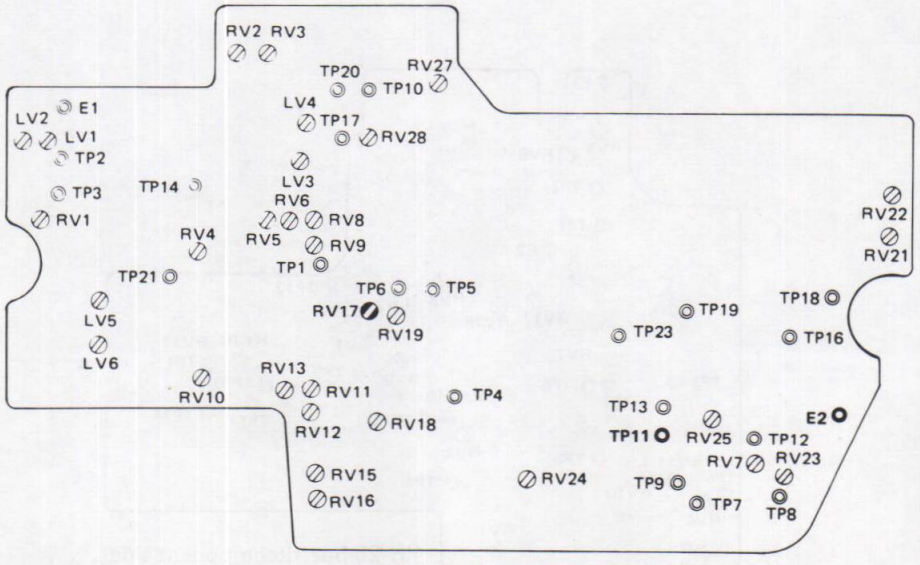


PR-25 board(component side)

2. Adjust RV17/CR-11 board so that the white level is 700 ± 50 mV as shown.

TP11/CR-11 board





CR-11 board(component side)

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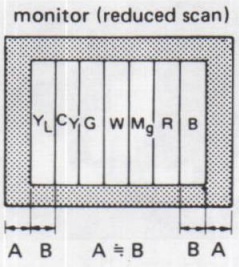
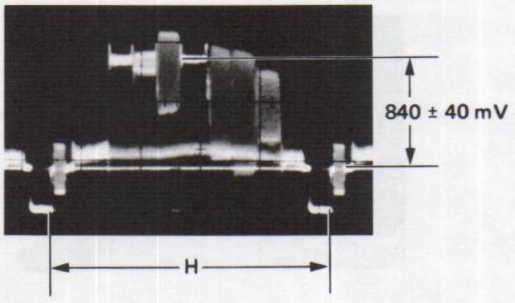
3-9-17. White Clip Adjustment

Note: Perform the Sec. 3-9-16. Y Level Adj. before this adjustment.

Camera : GAIN SW "6 dB" position
Lens : Iris F2.8
Object : Colour-bar pattern as shown



Equipment : Oscilloscope
Test point : TP11 (GND: E2)/CR-11 board
Scope trig : HD (C54/SG-34 board)
Adj point : ◓ RV4/PR-25 board

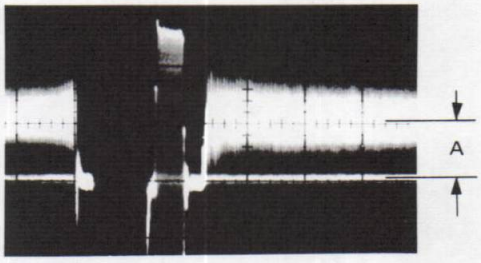


Note: After completing the adjustment, set GAIN switch to 0 dB position.

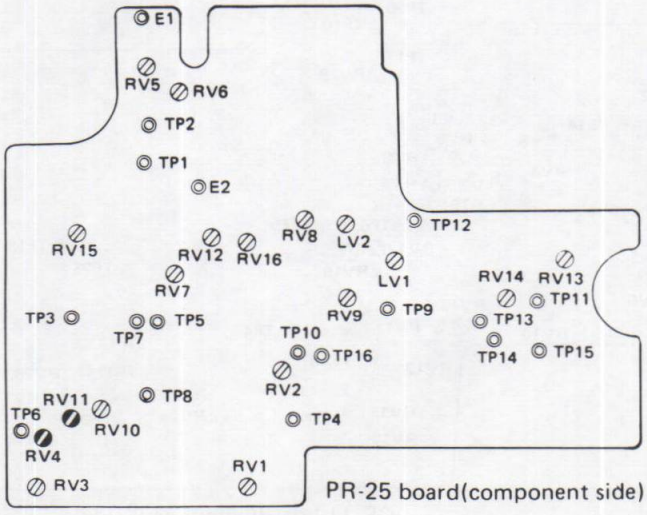
3-9-18. Automatic Black Level (ABL) Adjustment

Note: Perform the Sec. 3-9-14. Pre Pedestal Level Adjustment before the Automatic Black Level Adjustment.

Lens : Iris C
Equipment : Oscilloscope
Test point : TP11 (GND: E2)/CR-11 board
Scope trig : HD (C54/SG-34 board)
Adj point : ◓ RV11/PR-25 board
Adjust : Adjust RV11/PR-25 board so that the level of "A" stays in the same level even if ABL switch of camera is set to ON ⟷ OFF.



Note: After completing the adjustment, set ABL switch to OFF.



PR-25 board(component side)

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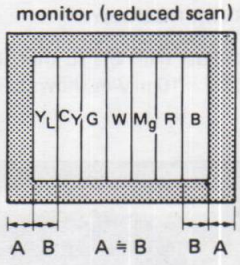
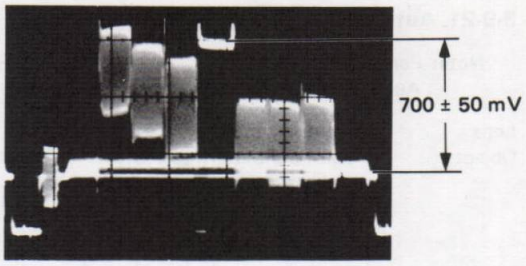
3-9-19. Video Output Level Adjustment

Note: • Perform the Sec. 3-9-16. Y Level Adj. before the Video Output Level Adj.
• Attach a 75-ohm terminator to VIDEO OUT connector of AC adaptor "CMA-7CE".

Object : Colour-bar pattern as shown

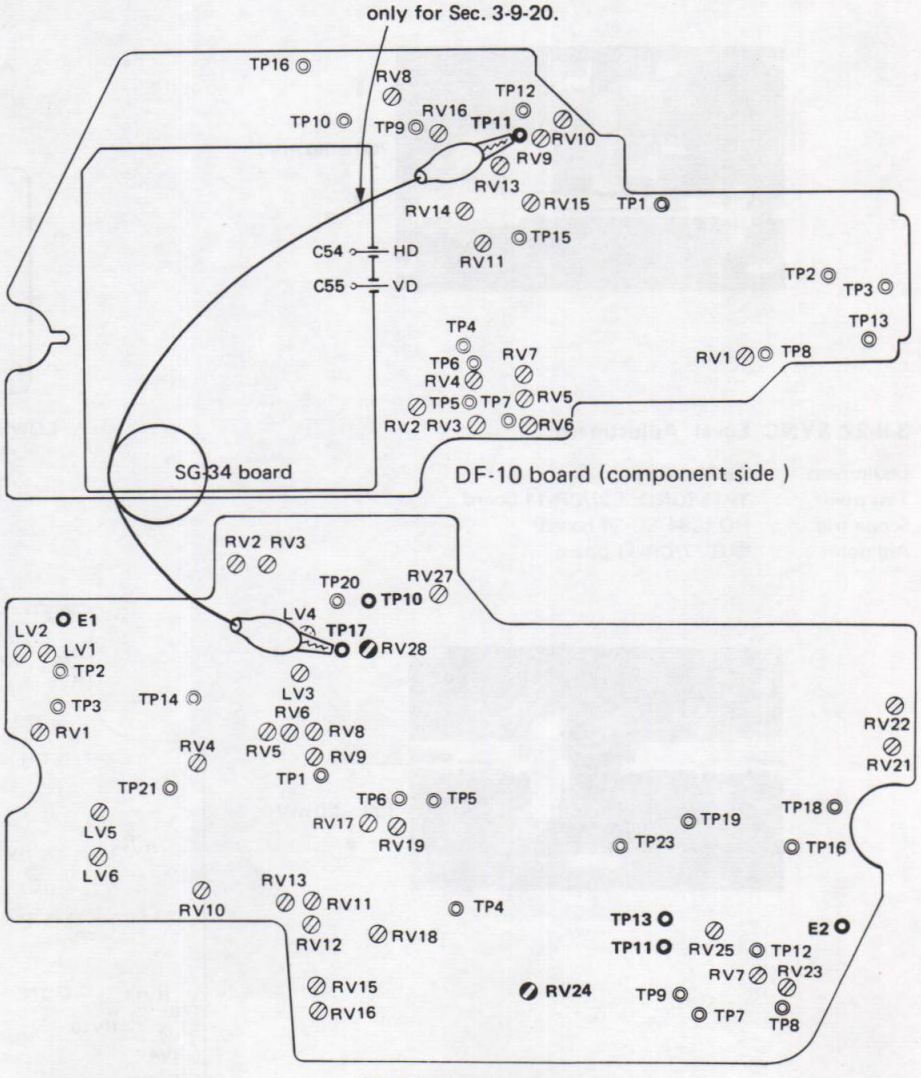


Equipment : Oscilloscope
Test point : TP13 (GND: E2)/CR-11 board
Scope trig : HD (C54/SG-34 board)
Adj point : ◐ RV24/CR-11 board



3-9-20. Manual Iris Adjustment

Lens : Iris A
Equipment : VOM
Preparation : Connect a short wire between TP11/DF-10 board and TP17/CR-11 board.
Test point : TP10 (GND: E1)/CR-11 board
Adj point : ◐ RV28/CR-11 board
Spec : 4.5 ± 0.05 Vdc



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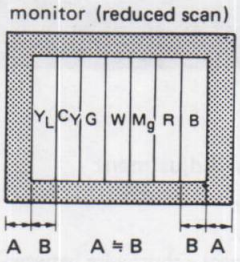
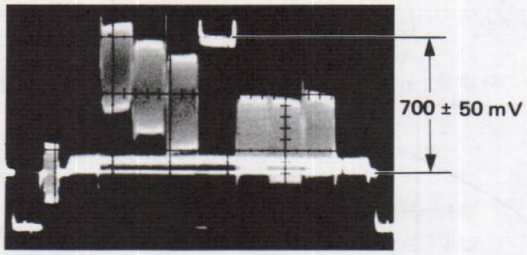
3-9-21. Auto Iris Adjustment

Note: Perform the Sec. 3-9-16. Y Level Adjustment, before the Auto Iris Adjustment.

Lens : Iris A
Object : Color-bar pattern as shown

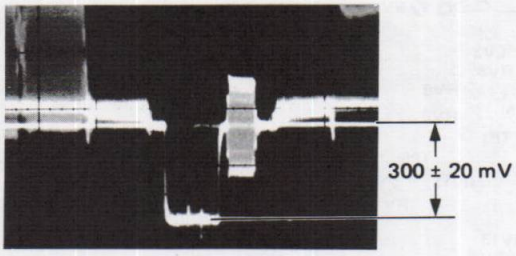


Equipment : Oscilloscope
Test point : TP11 (GND: E2)/CR-11 board
Scope trig : HD (C54/SG-34 board)
Adj point : ◐ RV27/CR-11 board



3-9-22. SYNC Level Adjustment

Equipment : Oscilloscope
Test point : TP11 (GND: E2)/CR-11 board
Scope trig : HD (C54/SG-34 board)
Adj point : ◐ RV7/CR-11 board

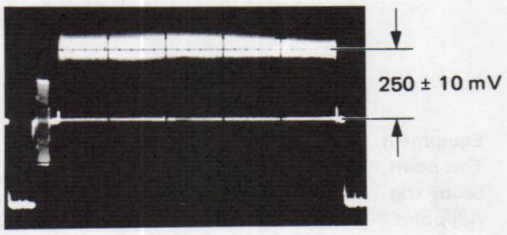


3-9-23. Low Light Indication Adjustment

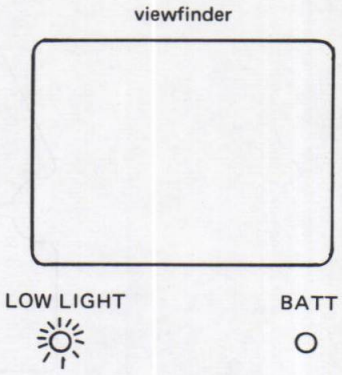
Note: Perform the Sec. 3-9-16. Y Level Adjustment, before the Low Light Indication Adjustment.

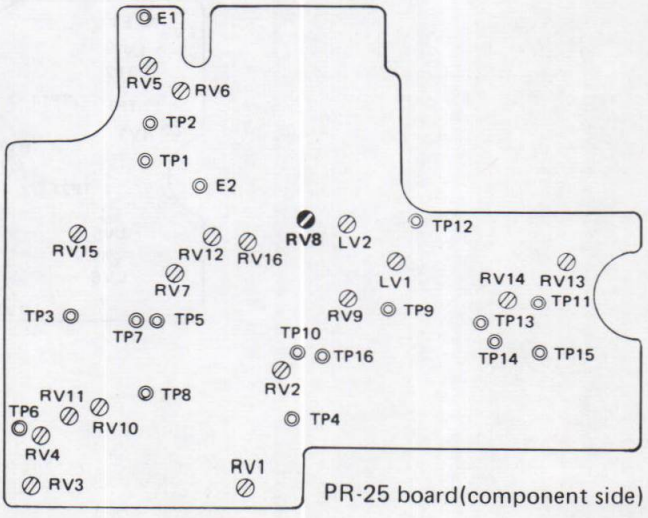
Object : All white pattern
Equipment : Oscilloscope
Test point : TP11 (GND: E2)/CR-11 board
Scope trig : HD (C54/SG-34 board)
Adj point : ◐ RV8/PR-25 board

Adjust : 1. Adjust lens' iris so that the video signal level is 250 ± 10 mV as shown.



2. Adjust RV8/PR-25 board until LOW LIGHT lamp lights.





PR-25 board(component side)

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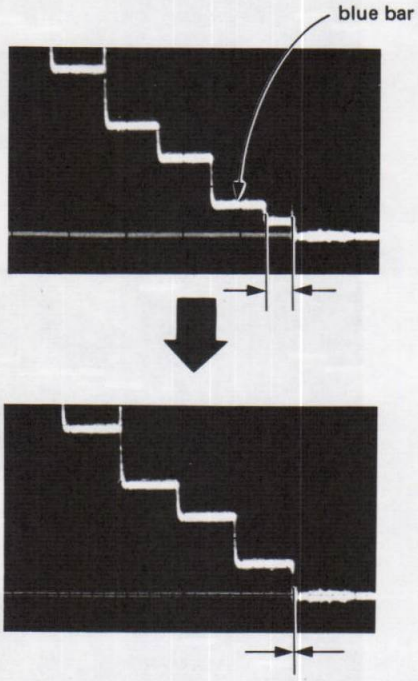
3-10. CHROMA SIGNAL SYSTEM

3-10-1. Colour-bar Size Adjustment

Camera : BARS/CAMERA SW "BARS" position
Equipment : Oscilloscope
Test point : TP9 (GND: E2)/CR-11 board
Scope trig : HD (C54/SG-34 board)
Adj point : ◐ RV10/CR-11 board

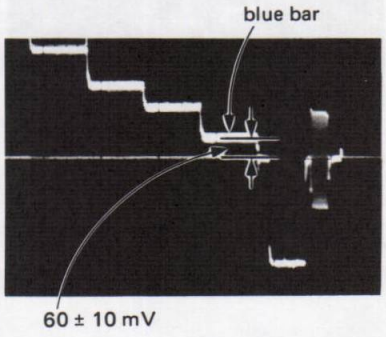


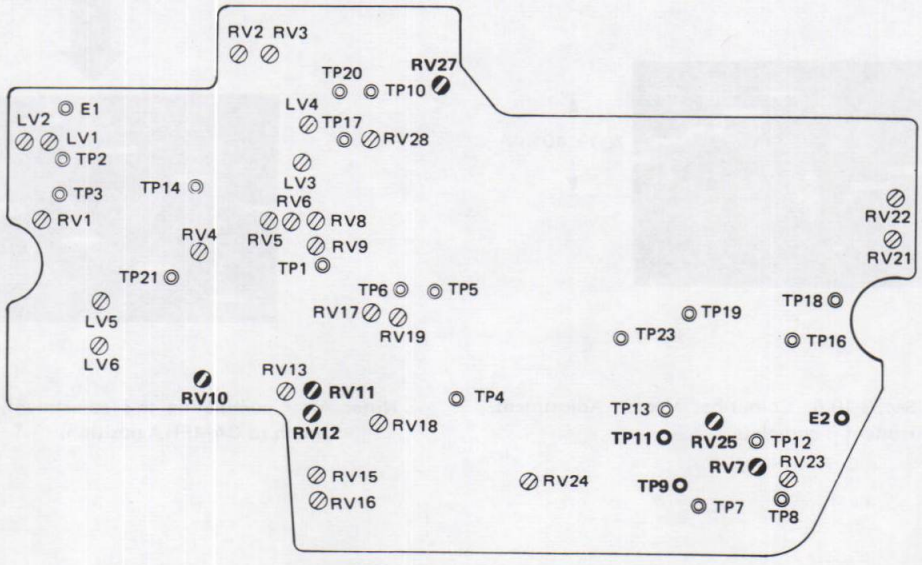
Note: After completing this adjustment, set BARS/CAMERA switch to CAMERA position.

3-10-2. Colour-bar Set Up Level Adjustment

Note: Colour-bar Set Up Level Adjustment and Colour-bar Yellow Level Adjustment mutually affect each other. Consequently, when performing these adjustments, alternately repeat the two adjustments two or three times to obtain the desired spec.

Camera : BARS/CAMERA SW "BARS" position
Equipment : Oscilloscope
Test Point : TP11 (GND: E2)/CR-11 board
Preparation : Turn RV11 and RV12/CR-11 board fully clockwise ↻ respectively so that the chroma level is "0".
Adj point : ◐ RV25/CR-11 board





CR-11 board(component side)

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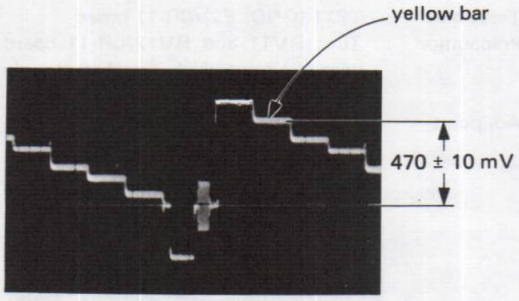
3-10-3. Colour-bar Yellow Level Adjustment

Note: Perform the Sec. 3-10-2. Colour-bar Set Up Level Adjustment, before this adjustment.

Camera : BARS/CAMERA switch "BARS" position
Equipment : Oscilloscope
Test point : TP11/CR-11 board
Adj point : ⊘RV13/CR-11 board

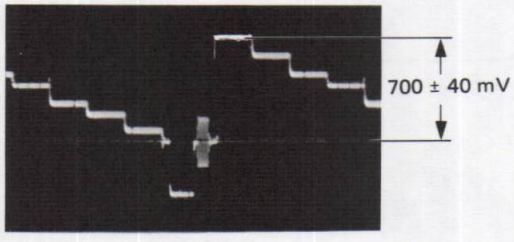


Note: Proceed to Sec. 3-10-4. Colour-bar White Level Adjustment, after this adjustment is complete.

3-10-4. Colour-bar White Level Adjustment

Note: Perform the Sec. 3-10-2. Colour-bar Set Up Level Adjustment and Sec. 3-10-3. Colour-bar Yellow Level Adjustment, before this adjustment.

Camera : BARS/CAMERA switch "BARS" position
Equipment : Oscilloscope
Test point : TP11/CR-11 board
Adj point : ⊘RV14/CR-11 board

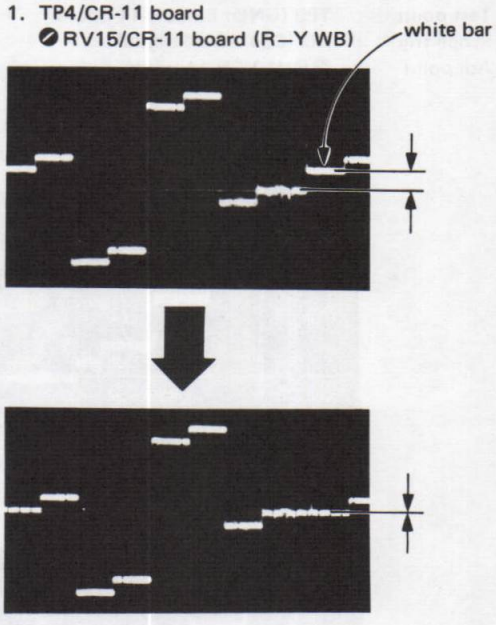


Note: Proceed to Sec. 3-10-8. Colour-bar Vector Adjustment after this adjustment is complete.

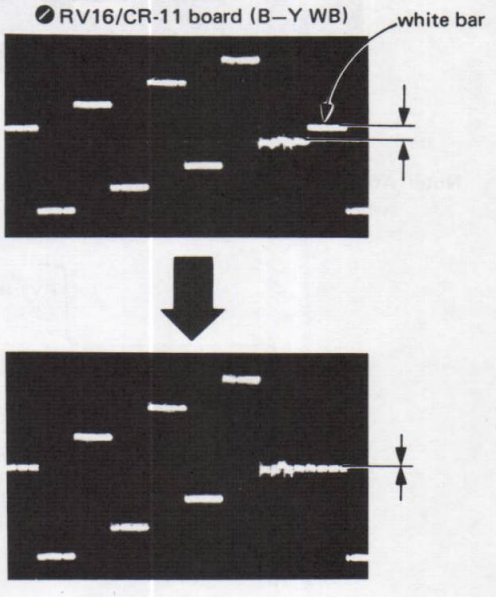
3-10-5. Colour-bar White Balance Adjustment

Camera : BARS/CAMERA SW "BARS" position
Equipment : Oscilloscope
Scope trig : HD (C54/SG-34 board)

Adjust : 1. TP4/CR-11 board
⊘RV15/CR-11 board (R–Y WB)



2. TP5/CR-11 board
⊘RV16/CR-11 board (B–Y WB)



Note: After completing this adjustment, set BARS/CAMERA switch to CAMERA position.

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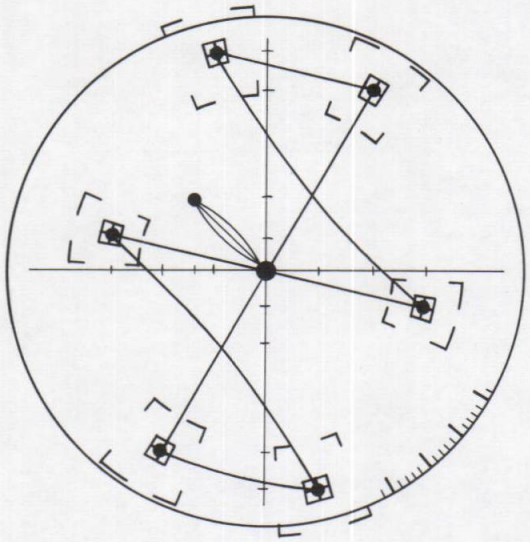
3-10-6. Carrier Balance Adjustment

Note: Perform the Sec. 3-10-5. Colour-bar White Balance adj., before the Carrier Balance Adj.

Camera : BARS/CAMERA SW "BARS" position
Equipment : Vectorscope NTSC mode
Adj point : ◐ RV18/CR-11 board
◐ RV19/CR-11 board
Adjust : Adjust so that the white spot is positioned in the centre.

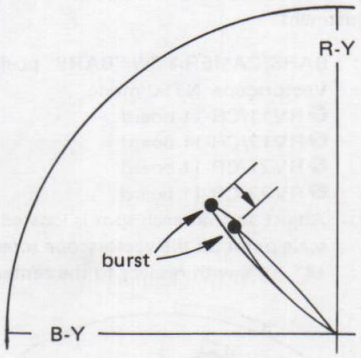


Note: After completing this adjustment, set BARS/CAMERA switch to CAMERA position.

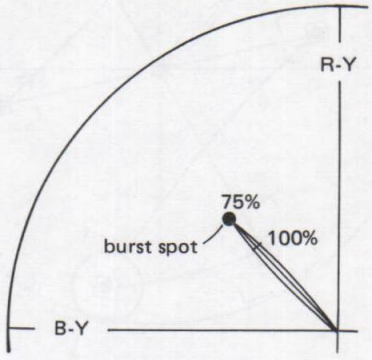
3-10-7. Burst Level Adjustment

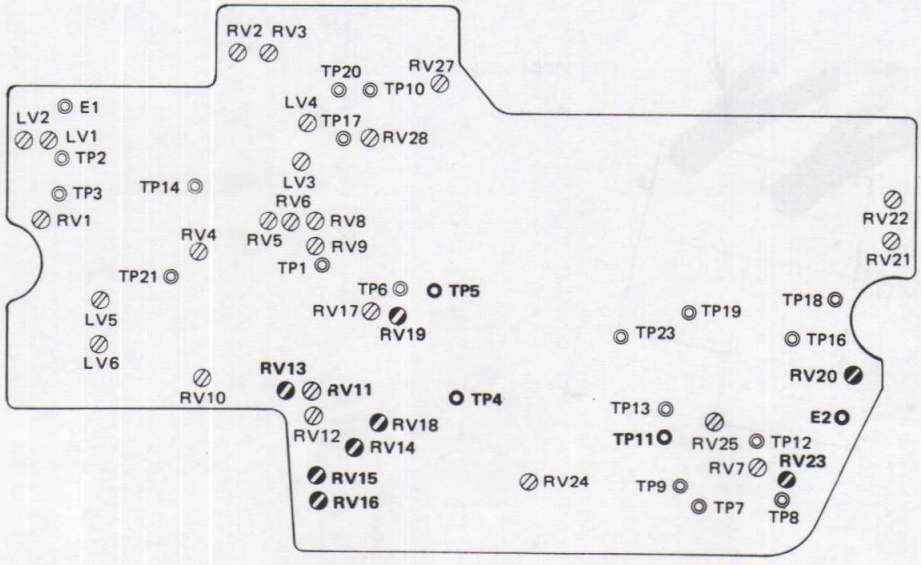
Equipment : Vectorscope NTSC mode

Adjust : 1. ◐ RV20/CR-11 board
Adjust so that two burst spots are superimposed.



2. ◐ RV23/CR-11 board
Adjust so that the burst spot is positioned at 75% position on vectorscope.





CR-11 board(component side)

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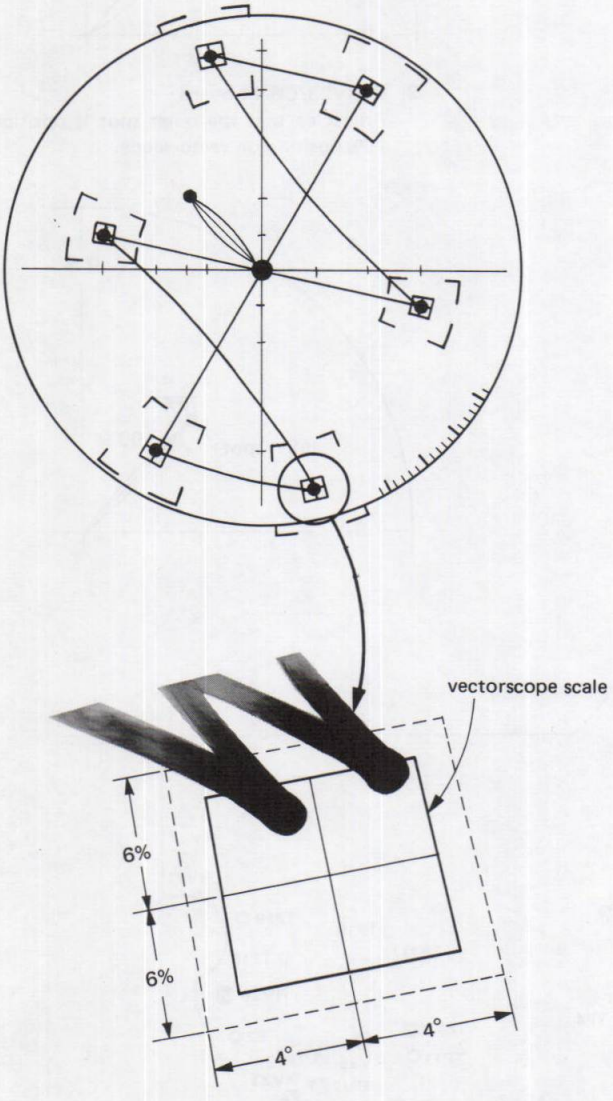
3-10-8. Colour-bar Vector Adjustment

Note: Set RV11/CR-11 board and RV12/CR-11 board to the mechanical center position, when RV11 and RV12 are set to full clockwise position for Sec. 3-10-2. Colour-bar Set-up Adjustment, Sec. 3-10-3. Colour-bar Yellow Level Adjustment and Sec. 3-10-4. Colour-bar White Level Adjustment.

Camera : BARS/CAMERA SW "BARS" position
Equipment : Vectorscope NTSC mode
Adj point : ● RV11/CR-11 board
● RV12/CR-11 board
● RV21/CR-11 board
● RV22/CR-11 board
Adjust : Adjust so that each spot is located on the specified scale point on the vectorscope screen.
spec : ±4°, ±6% with respect to the center of the scale.



Note: After completing this adjustment, set BARS/CAMERA switch to CAMERA position.

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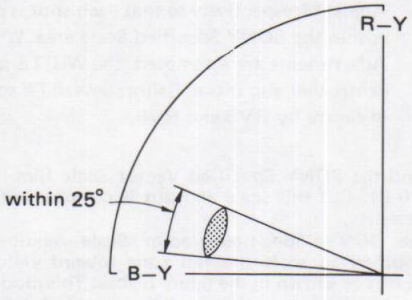
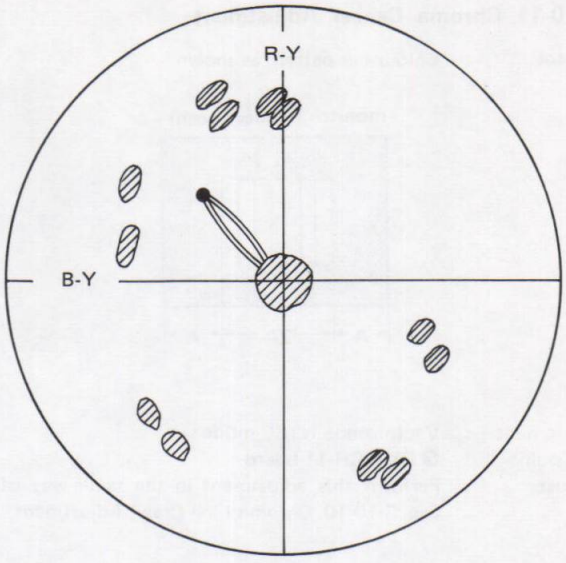
3-10-9. Index Twist Adjustment

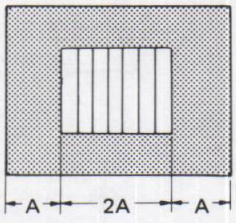
Object : All white pattern (pattern box "AUTO")
Lens : Iris F4
cover the lens with yellow filter.
Equipment : Vectorscope
Adj point : ● RV2/CR-11 board
● RV3/CR-11 board
Adjust : Minimize the size of bright spot on vectorscope.



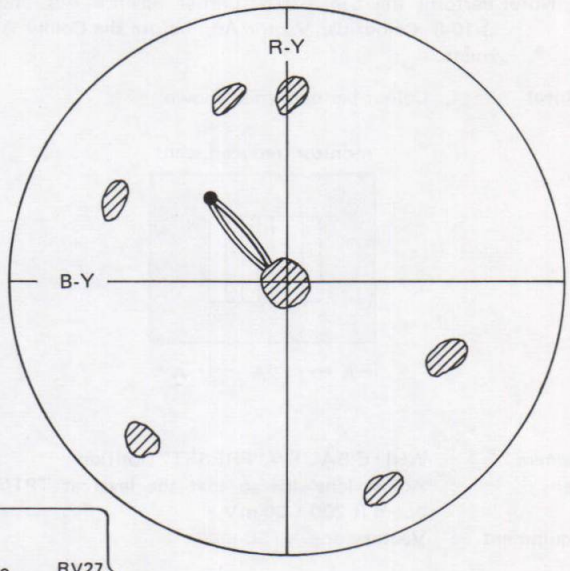


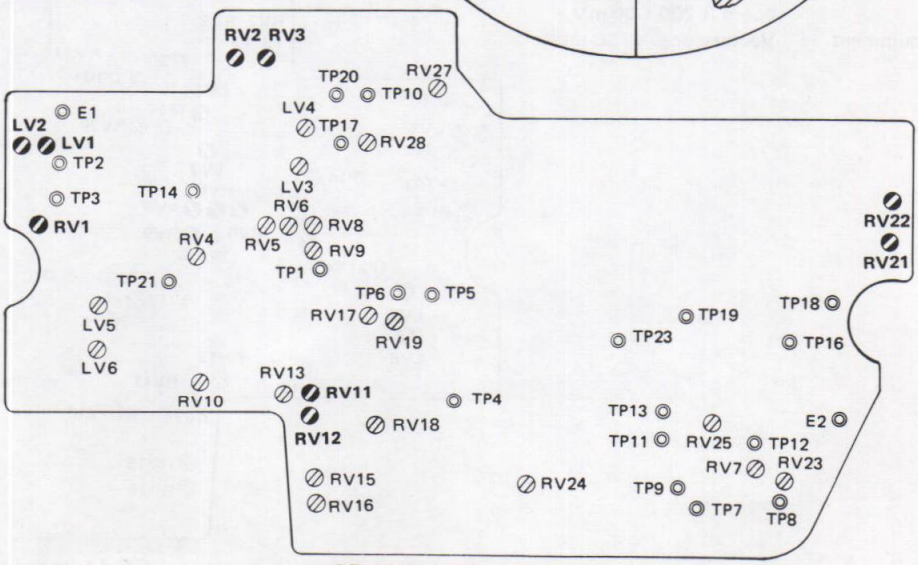
3-10-10. Chroma Line Crawl Adjustment

Object : Colour-bar pattern as shown
monitor (reduced scan)



Lens : Adjust lens' iris so that the level at TP1/PR-25 board is 200 ± 20 mV.
Equipment : Vectorscope NTSC mode
Adj point : ● RV1/CR-11 board
● LV1/CR-11 board
● LV2/CR-11 board
Adjust : Adjust three adjustments alternatingly until each spot is superimposed and their sizes are minimized.





CR-11 board(component side)

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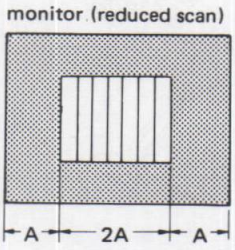
3-10-11. Chroma Cancel Adjustment

Object : Colour-bar pattern as shown

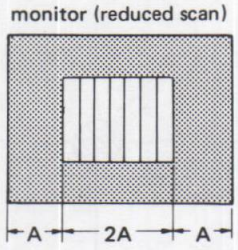


Equipment : Vectorscope NTSC mode
Adj point : ● RV4/CR-11 board
Adjust : Perform this adjustment in the same way of the Sec. 3-10-10. Chroma Line Crawl Adjustment.

3-10-12. Colour Adjustment

Note: Perform the Sec. 3-10-6. Carrier Balance Adj. and Sec. 3-10-8. Colour-bar Vector Adj. before the Colour Adjustment.

Object : Colour-bar pattern as shown

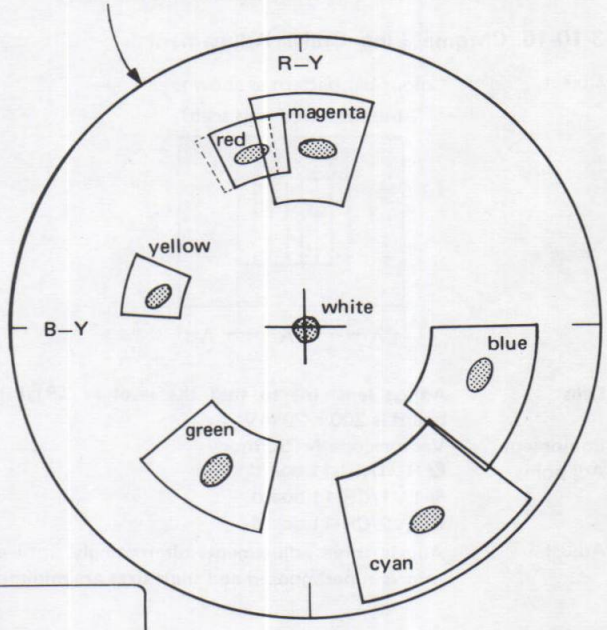


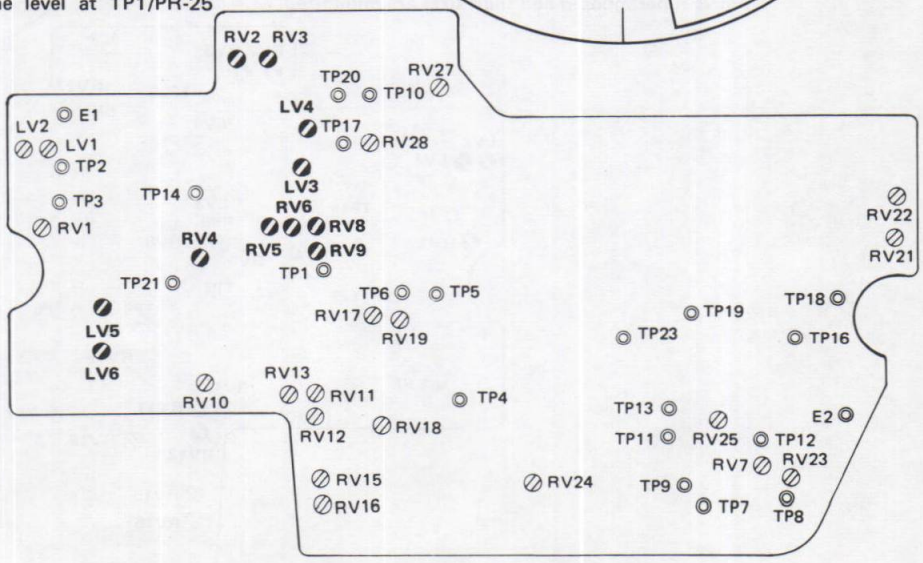
Camera : WHITE BAL SW "PRESET" position
Lens : Adjust lens' iris so that the level at TP1/PR-25 board is 200 ± 20 mV.
Equipment : Vectorscope NTSC mode

Adj point : ● RV5/CR-11 board
● RV6/CR-11 board
● RV8/CR-11 board
● RV9/CR-11 board
● LV3/CR-11 board
● LV4/CR-11 board
● LV5/CR-11 board
● LV6/CR-11 board

Adjust : Adjust ● respectively so that each spot is positioned within the SONY Specified Scale area. When These Adjustments are attempted, the WHITE spot in the centre will also move. Calibrate WHITE spot to be in centre by RV5 and RV6.

Find the SONY Specified Vector Scale film (J-6022-070-B). Cut this scale and put it on your vectorscope screen.
The SONY Specified Vector Scale requires to be modified to shift the red zone toward yellow by 5 degrees as shown in the figure below. This modification can be done by moving the red zone by 5 degrees toward the yellow around the center of the vector scale. The doted area shows the modified red specification.





CR-11 board(component side)

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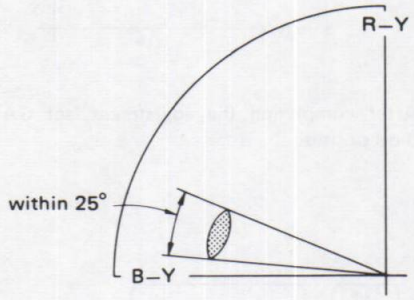
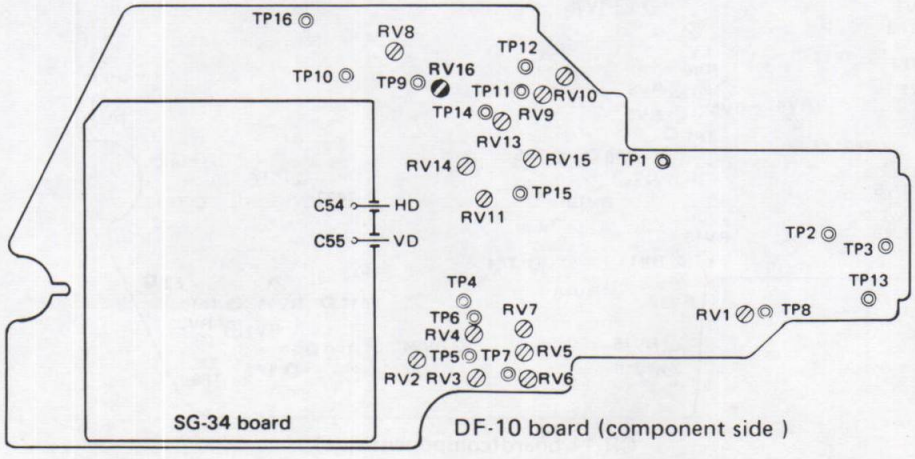
3-10-13. Uneven Colour Adjustment

Note: Proceed to this adjustment, after all adjustment is completed.

Object : All white pattern
Lens : Iris F4
Cover the lens with yellow filter
(KODAK wratten filter No. 9)
Equipment : Vectorscope
Adj point : ● RV16/DF-10 board (E focus)
● RV2/CR-11 board) (Index twist)
● RV3/CR-11 board)
Adjust : Minimize the size of bright spot on vectorscope.



Note: Make sure that the specification in Sec. 3-10-12. Colour Adj. is satisfied, after this adjustment is complete. If not, perform the Colour Adj. in Sec. 3-10-12.



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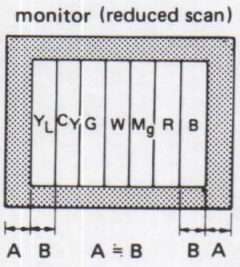
3-10-14. +12 dB Chroma Suppress Adjustment

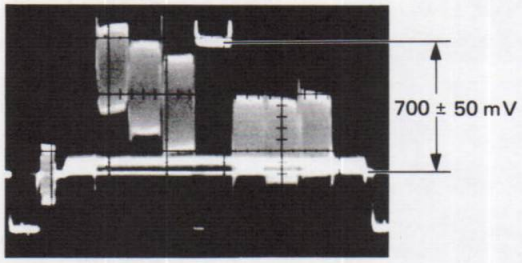
SER. NO. 10631 AND HIGHER (AEP)
90001 AND HIGHER (AEP)
50081 AND HIGHER (UK)

Note: Perform the Sec. 3-9-16. Y Level Adj. and Sec. 3-10-12. Color Adj. before this adjustment.

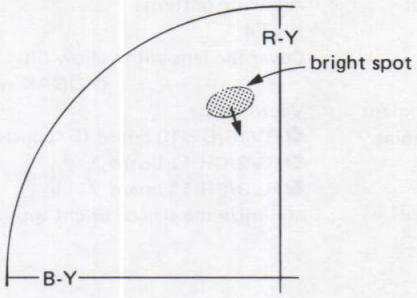
Camera : GAIN SW "12 dB" position
Object : Color-bar pattern as shown



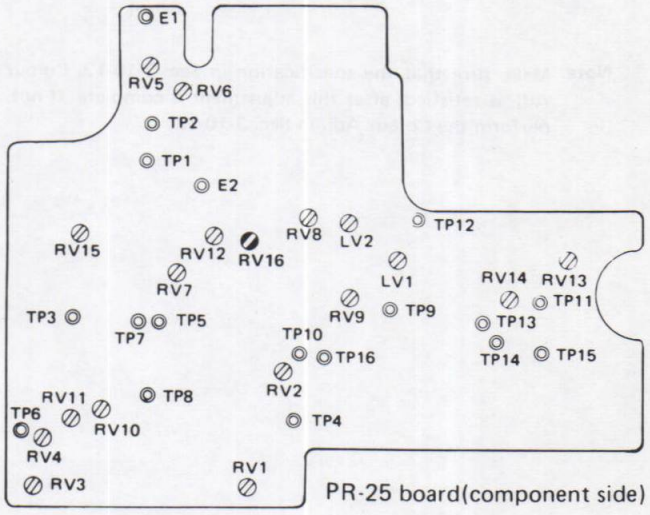
Equipment : Oscilloscope
Vectorscope
Adj point : ◐RV16/PR-25 board
Adjust : 1. Adjust lens iris so that the TP11/CR-11 board (video out) is 700 ± 50 mV.



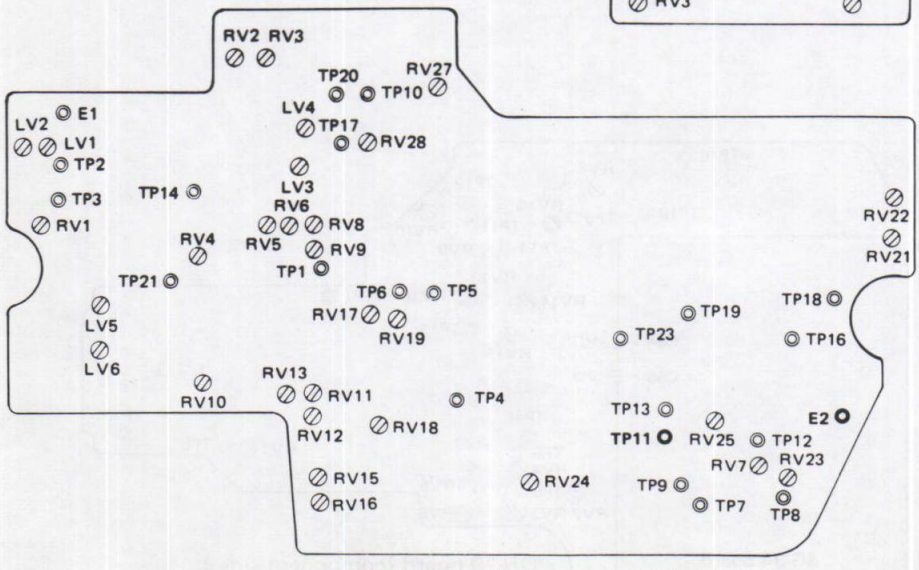
2. Adjust ◐RV16/PR-25 board so that the spot indicated red starts to be shifted toward the centre of the vectorscope scale.



Note: After completing the adjustment, set GAIN switch to 0 dB position.



PR-25 board(component side)



CR-11 board(component side)

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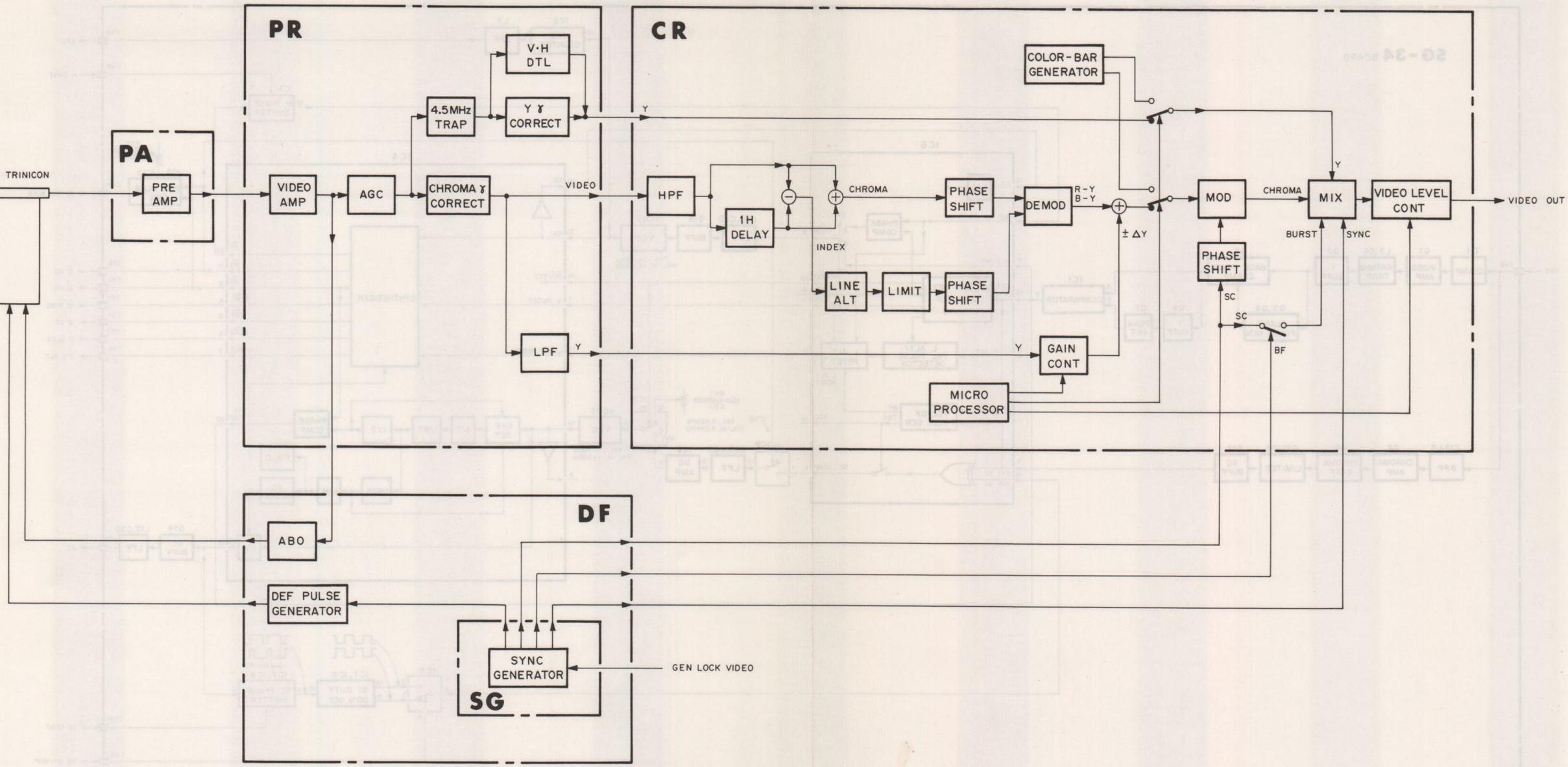
SECTION 4
DIAGRAMS

4-1. OVERALL BLOCK DIAGRAM



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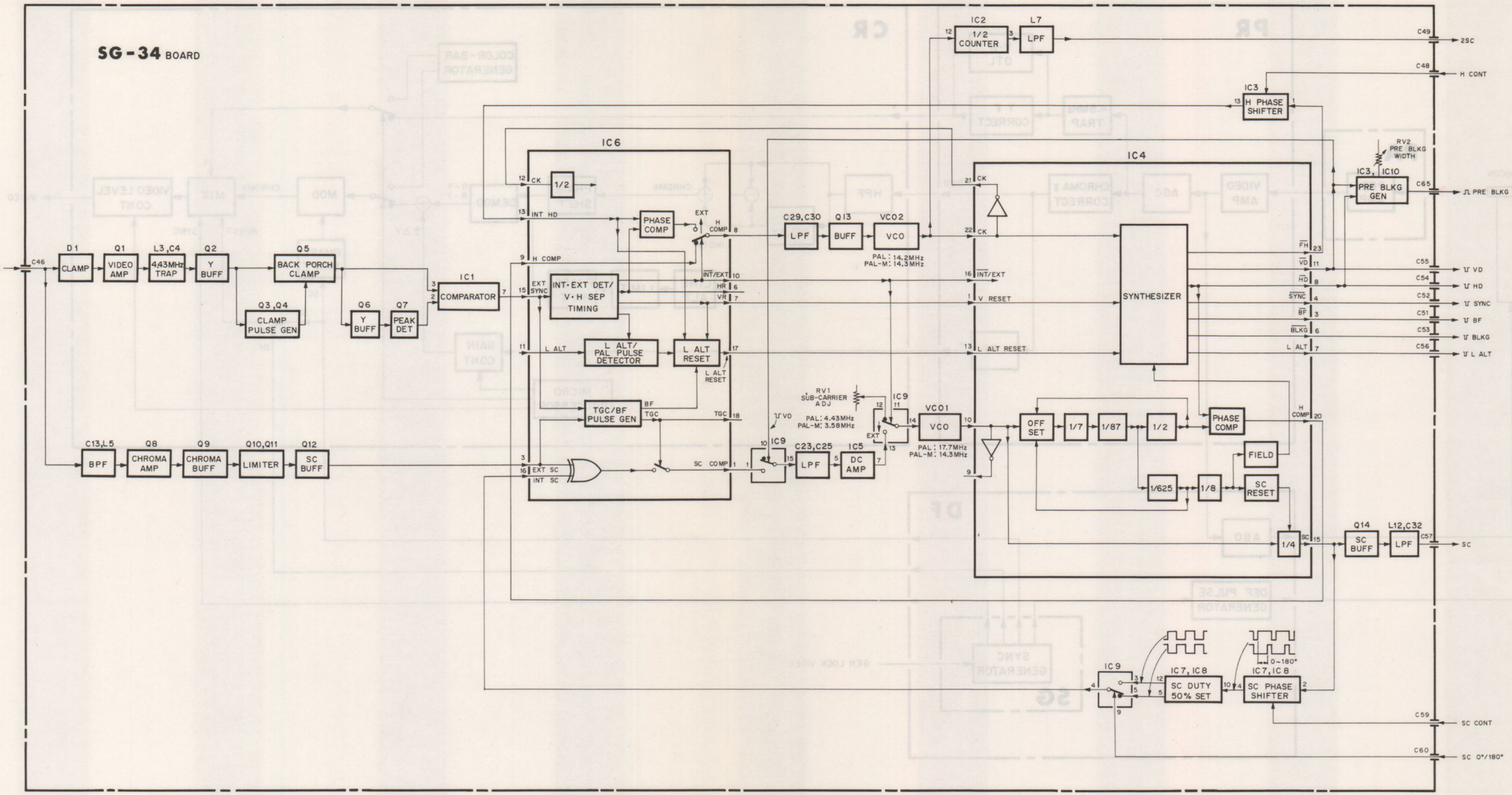
4-2. SG-34 BOARD BLOCK DIAGRAM
Sync Generator System



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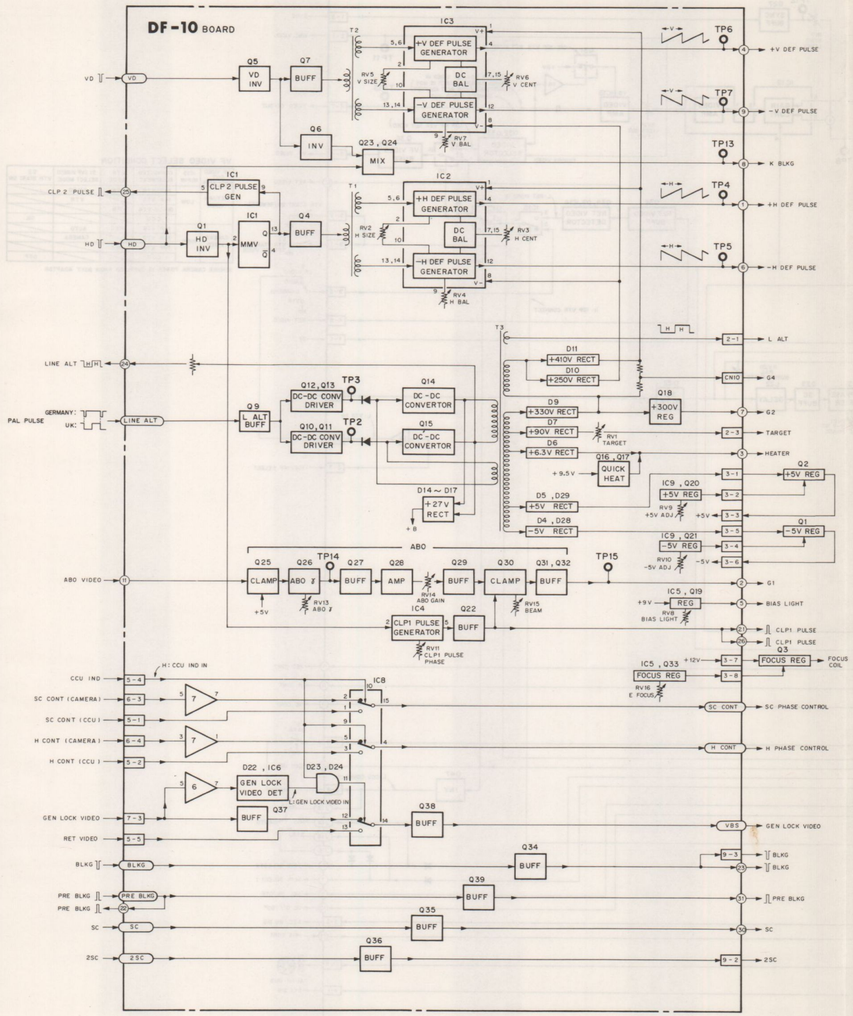
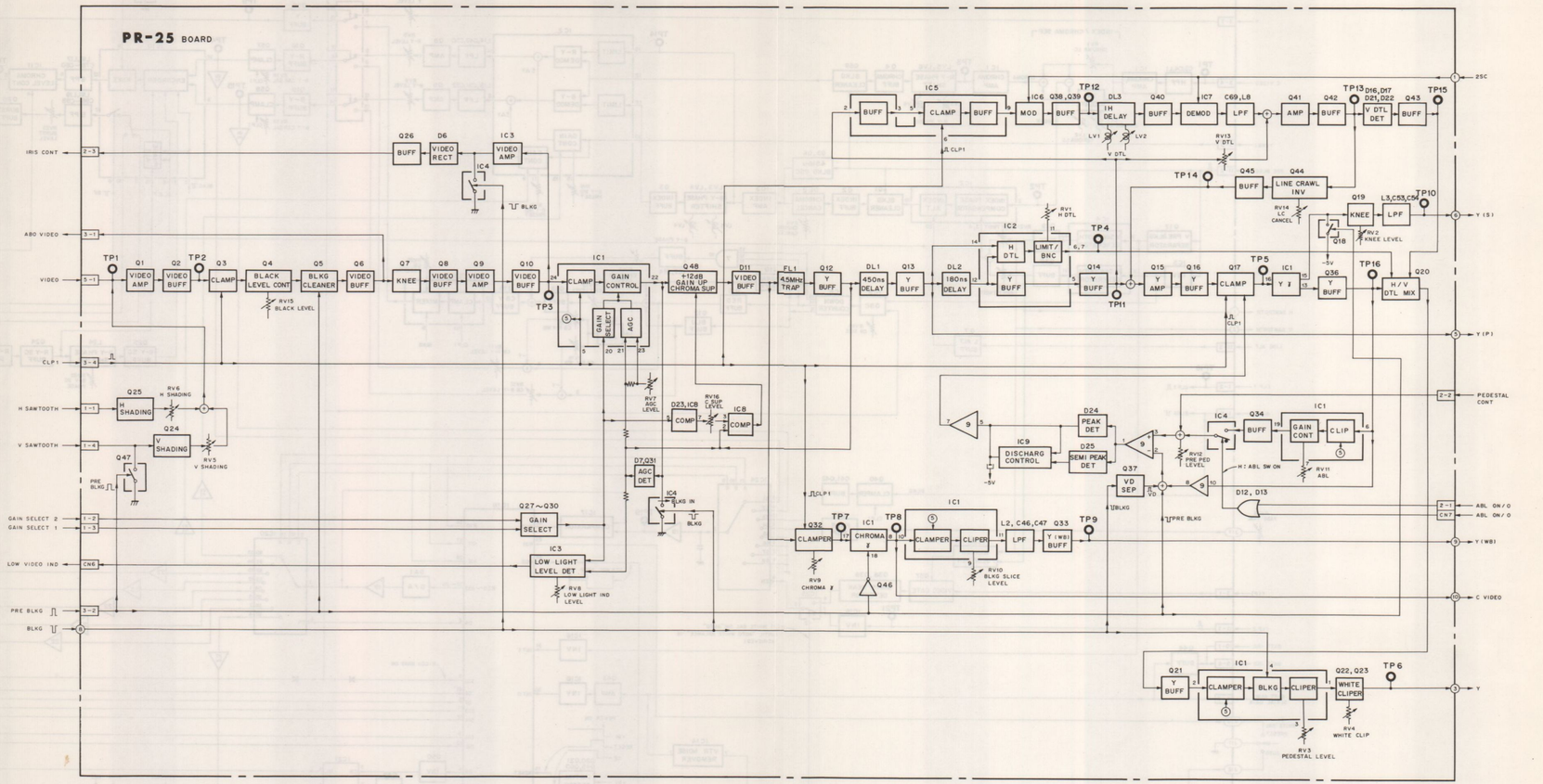
4-3. DF-10 BOARD BLOCK DIAGRAM
Deflection System



4-4. PR-25 BOARD BLOCK DIAGRAM
Y Signal System



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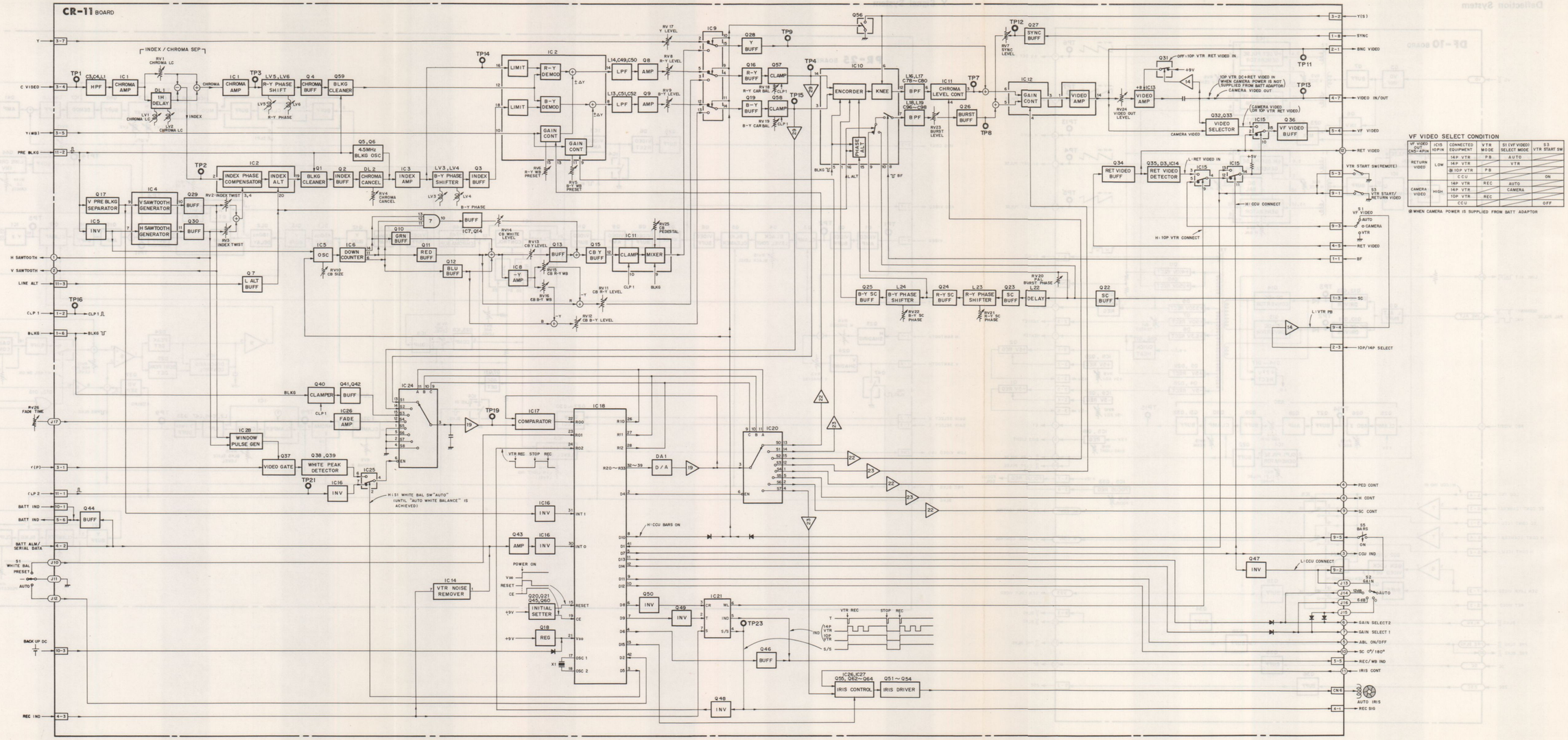
DXC-1800P | BLOCK DIAGRAM

4-5. CR-11 BOARD BLOCK DIAGRAM

Chroma Signal System



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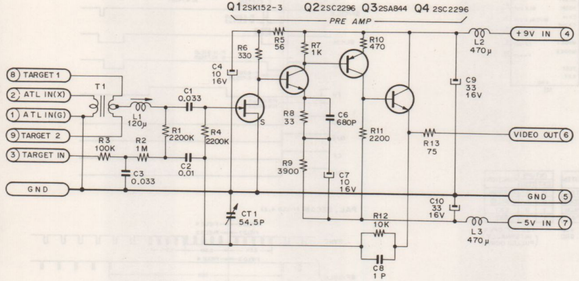
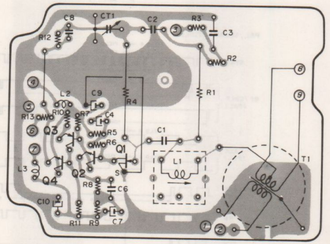
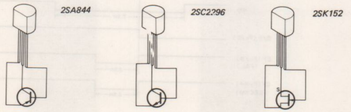
4-6. PA-12 BOARD Pre Amplifier SCHEMATIC DIAGRAM



MOUNTING DIAGRAM

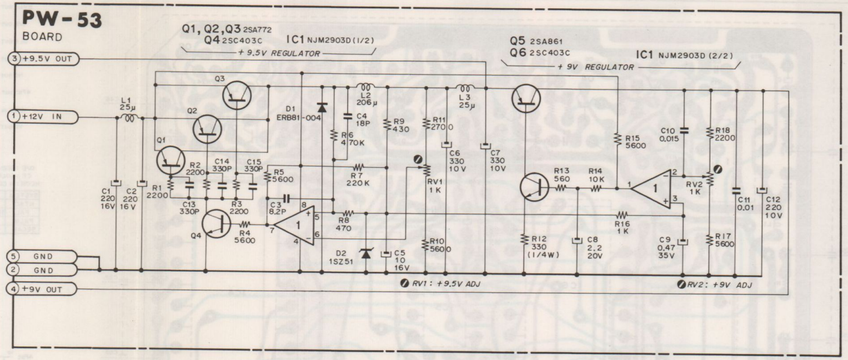
– SOLDERING SIDE –





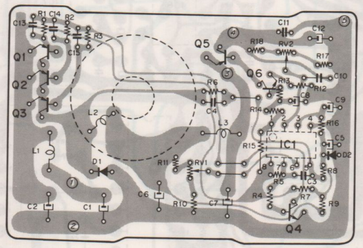
4-7. PW-53 BOARD +9.5V•+9V Regulator SCHEMATIC DIAGRAM

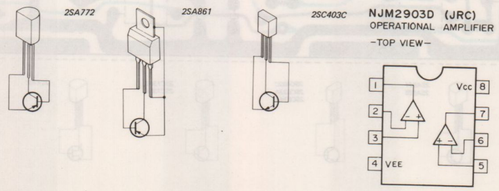
Serial No. UP to 11260 (AEP)
Serial No. UP to 50140 (UK)



MOUNTING DIAGRAM

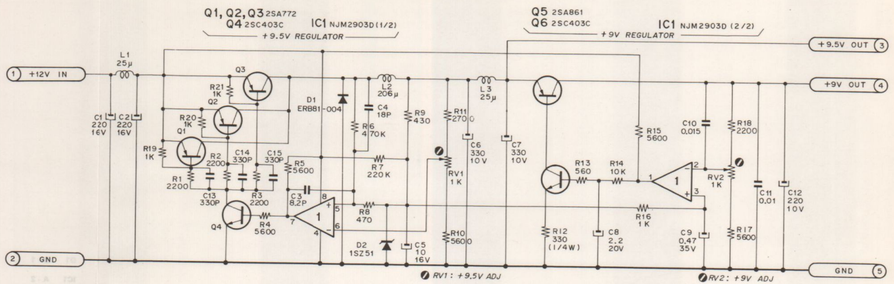
– SOLDERING SIDE –





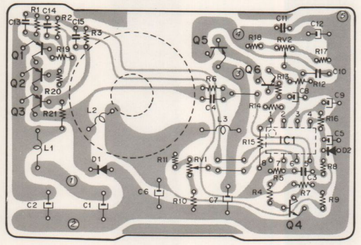
PW-53 BOARD SCHEMATIC DIAGRAM

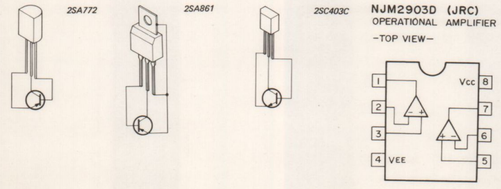
Serial No. 11261 and higher (AEP)
Serial No. 50141 and higher (UK)



MOUNTING DIAGRAM

– SOLDERING SIDE –





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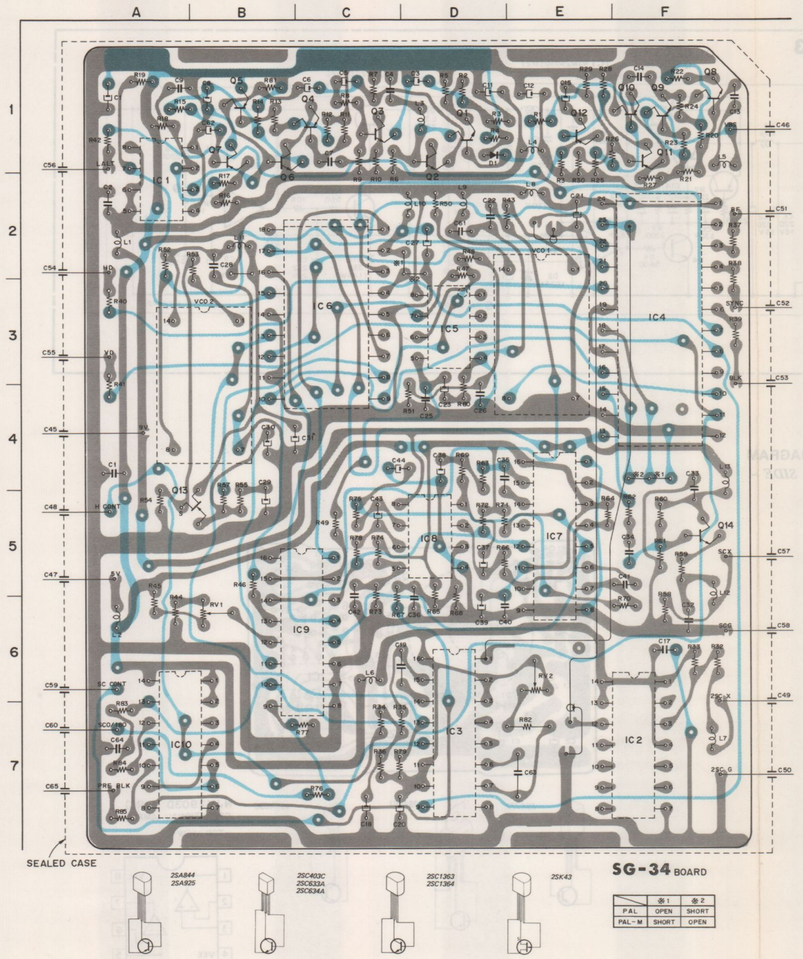
SG-34 | DXC-1800P | DXC-1800P | SG-34

4-8. SG-34 BOARD Sync Generator System MOUNTING DIAGRAM

– SOLDERING SIDE –

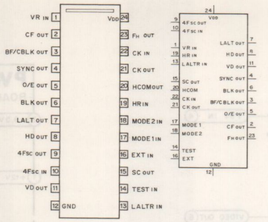
Serial No. UP to 11260 (AEP)
Serial No. UP to 50140 (UK)



D1	D-1
IC1	A-2
IC2	F-7
IC3	D-7
IC4	F-3
IC5	D-3
IC6	C-3
IC7	E-5
IC8	D-5
IC9	C-6
IC10	A-7
Q1	D-1
Q2	D-1
Q3	C-1
Q4	C-1
Q5	B-1
Q6	B-1
Q7	B-1
Q8	F-1
Q9	F-1
Q10	F-1
Q11	F-1
Q12	E-1
Q13	B-5
Q14	F-5
RV1	B-6
RV2	E-6

※1	※2
PAL	OPEN	SHORT
PAL-M	SHORT	OPEN

CX773A (SONY)
C-MOS SYNC GENERATOR (NTSC, PAL-M, PAL, SECAM)
— TOP VIEW —



O/E : ODD/EVEN FIELD
CF : COLOUR FRAME PULSE
HCOM : H COMPARATOR

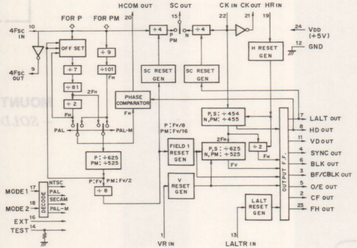
SYSTEM	4Fsc	CLOCK
NTSC	910 Fh	910Fh
PAL	1135Fh+25Fv	908Fh
PALM	909Fh	910Fh
SECAM	—	908Fh

INTUPS MODE 1	INTUPS MODE 2	SYSTEM
0	0	NTSC
0	1	SECAM
1	0	PALM
1	1	PAL

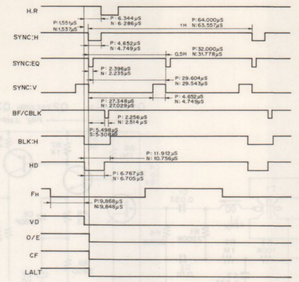
"1" : VDD
"0" : GND

INTUPS EXT	INTUPS TEST	JUNCTION
0	0	INTERNAL
0	1	INVALID
1	0	EXT
1	1	TEST

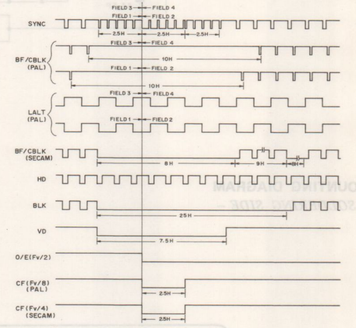
TEST "0" : OPEN
(INTERNALLY PULLED DOWN)



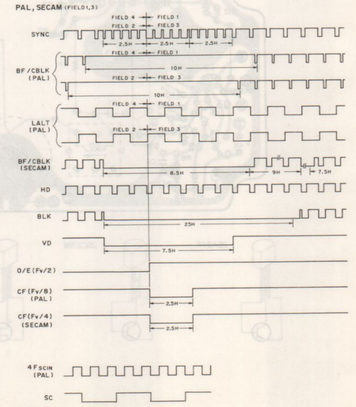
P : PAL, SECAM
N : NTSC, PALM



PAL, SECAM (FIELD 4,2)



PAL, SECAM (FIELD 1,3)



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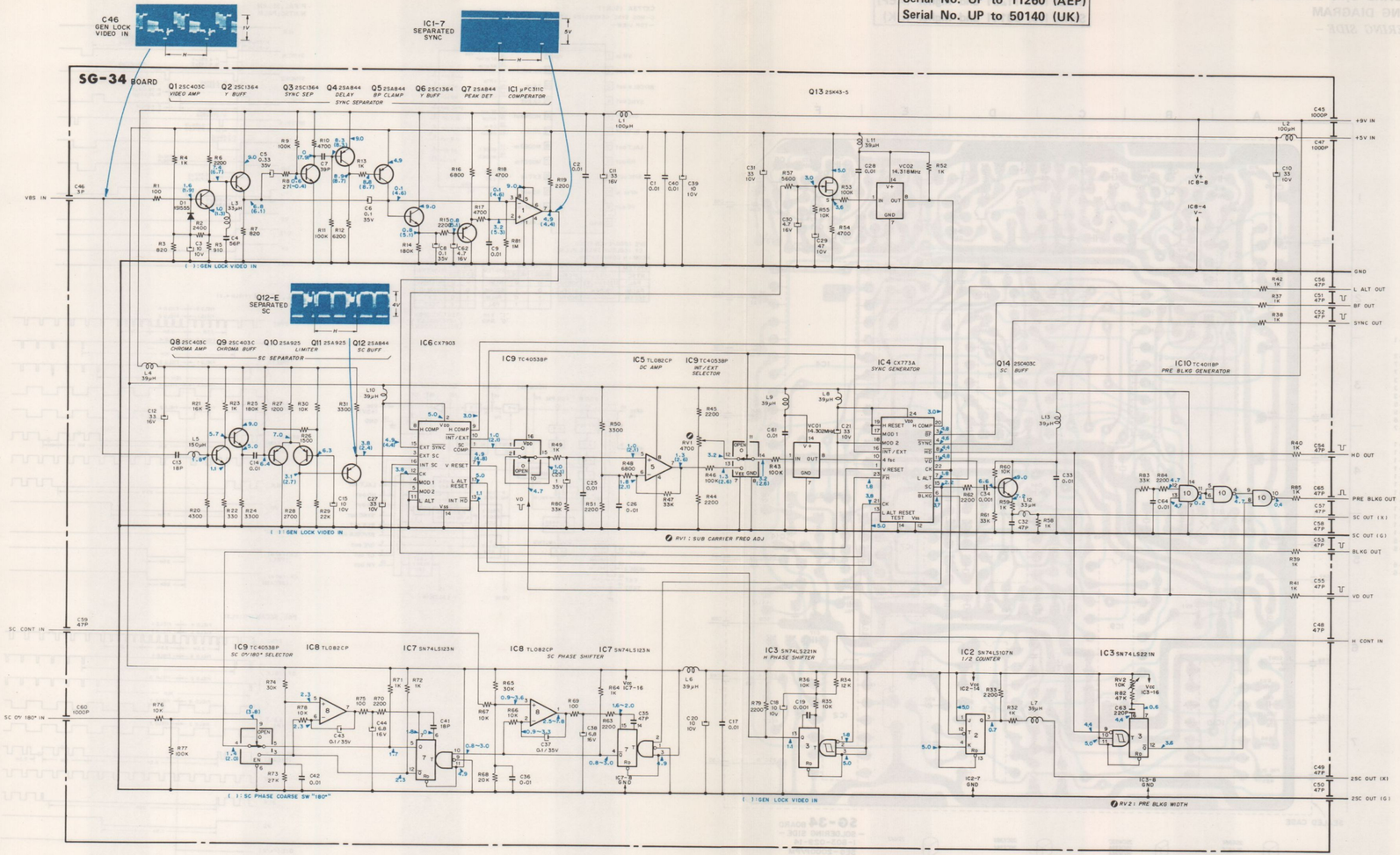
SCHEMATIC DIAGRAM

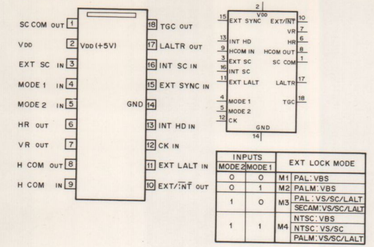
Serial No. UP to 11260 (AEP)
Serial No. UP to 50140 (UK)



Note:

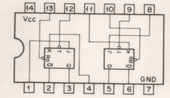
1. All voltages are dc, measured with a digital volt meter (input resistance 10 MΩ).
2. All waveforms are taken in conditions below.
   - Supply a color-bar signal to GEN LOCK IN terminal.

CX7903 (SONY)
CMOS GENLOCK DRIVER FOR CX773
— TOP VIEW —



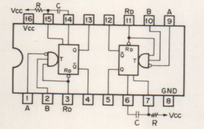
INPUTS MODE 2	INPUTS MODE 1	EXT LOCK MODE
0	0	M1 : PAL : VBS
0	1	M2 : PALM : VBS
1	0	M3 : PAL : VS/SC/LALT SECAM : VS/SC/LALT
1	1	M4 : NTSC : VBS NTSC : VS/SC PALM : VS/SC/LALT

SN74LS107N (TI)
TTL J-K FLIP FLOP WITH DIRECT RESET
— TOP VIEW —



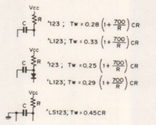
INPUTS Rd	J	K	CK	OUT Qn+1
L	X	X	X	L
H	⊓	L	L	Qn
H	⊓	L	H	L
H	⊓	H	L	H
H	⊓	H	H	Qn
H	H	X	X	Qn

SN74LS123N (TI)
TTL RETRIGGERABLE MONOSTABLE MULTIVIBRATOR WITH DIRECT RESET
— TOP VIEW —

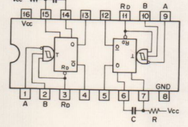


INPUTS Rd	A	B	OUTPUTS Q	Q̄
L	X	X	L	H
X	H	X	L	H
X	X	L	L	H
H	L	↑	⊓	⊔
H	↓	H	⊓	⊔
↑	L	H	⊓	⊔

OUTPUT PULSE WIDTH

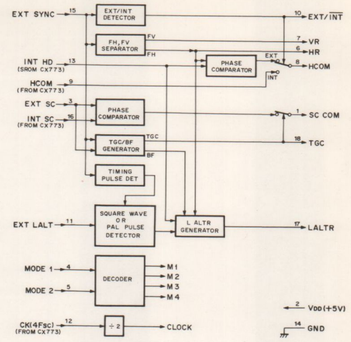


SN74LS221N (TI)
TTL MONOSTABLE MULTIVIBRATOR WITH SCHMITT TRIGGER INPUT
— TOP VIEW —

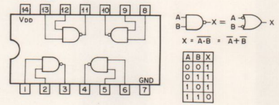


INPUTS Rd	A	B	OUTPUTS Q	Q̄
L	X	X	L	H
X	H	X	L	H
X	X	L	L	H
H	L	↑	⊓	⊔
H	↓	H	⊓	⊔
↑	L	H	⊓	⊔

OUTPUT PULSE WIDTH = 0.7CR

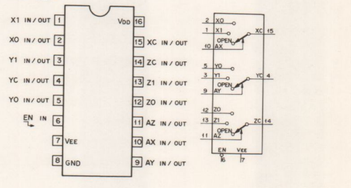


TC4011BP (TOSHIBA)
C-MOS 2-INPUT NAND GATE
— TOP VIEW —



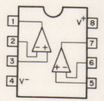
A	B	X
0	0	1
0	1	1
1	0	1
1	1	0

TC4053BP (TOSHIBA)
C-MOS 2-CHANNEL MULTIPLEXER / DEMULTIPLEXER
— TOP VIEW —

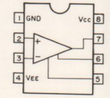


CONT. INPUTS EN	A	(X,Y,Z)	ON CHANNEL
0	0		0
0	1		1
1	X		OPEN

TL082CP (TI)
OPERATIONAL AMPLIFIER (JFET-INPUT)
— TOP VIEW —



μPC311C (NEC)
VOLTAGE COMPARATOR
— TOP VIEW —



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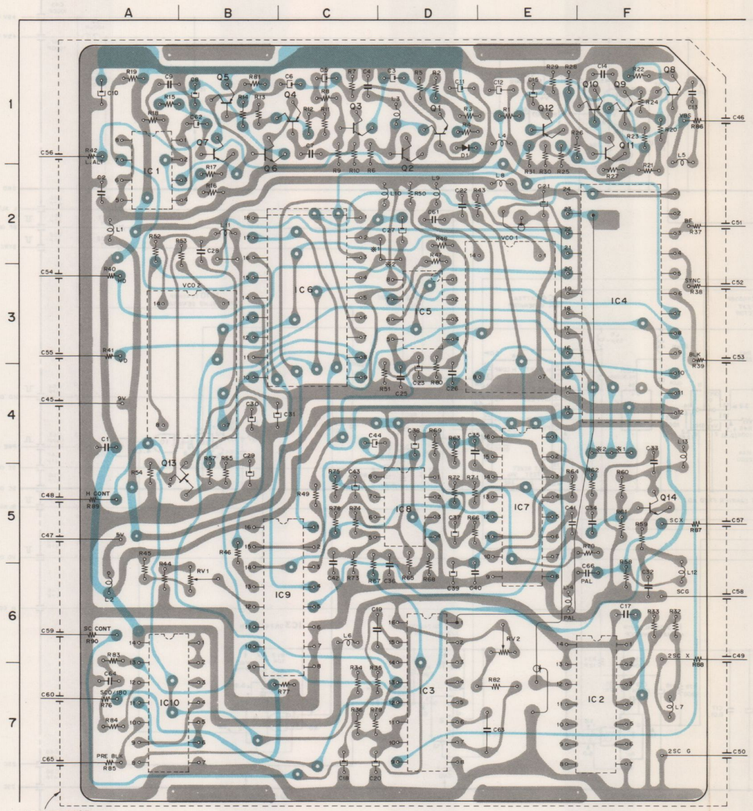
SG-34 | DXC-1800P | DXC-1800P | SG-34

SG-34 BOARD Sync Generator System MOUNTING DIAGRAM

– SOLDERING SIDE –

Serial No. 11261 and higher (AEP)
Serial No. 50141 and higher (UK)

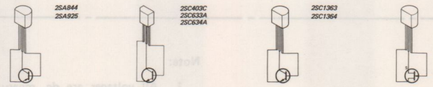


D1 D-1

IC1 A-2
IC2 F-7
IC3 D-7
IC4 F-3
IC5 D-3
IC6 C-3
IC7 E-5
IC8 D-5
IC9 C-6
IC10 A-7

Q1 D-1
Q2 D-1
Q3 C-1
Q4 C-1
Q5 B-1
Q6 B-1
Q7 B-1
Q8 F-1
Q9 F-1
Q10 F-1
Q11 F-1
Q12 E-1
Q13 B-5
Q14 F-5

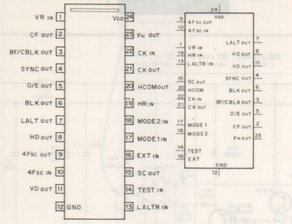
RV1 B-6
RV2 E-6



SG-34 BOARD
– SOLDERING SIDE –
1-603-029-14
SEG-2000P/PM
DXC-1800P/PM
SEG-2000AP/APM
CRK-2000P/PM

	⊕1	⊕2
PAL	OPEN	SHORT
PAL-M	SHORT	OPEN

CX773A (SONY)
C-MOS SYNC GENERATOR (NTSC, PAL-M, PAL, SECAM)
–TOP VIEW–



O/E : ODD/EVEN FIELD
CF : COLOUR FRAME PULSE
HCOM : H COMPARATOR

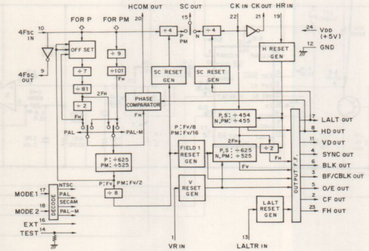
SYSTEM	4Fsc	CLOCK
NTSC	910 Fw	910Fw
PAL	1135 Fw+2Fv	908Fw
PALM	909Fw	910Fw
SECAM		908Fw

INTUPS MODE 1	MODE 2	SYSTEM
0	0	NTSC
0	1	SECAM
1	0	PALM
1	1	PAL

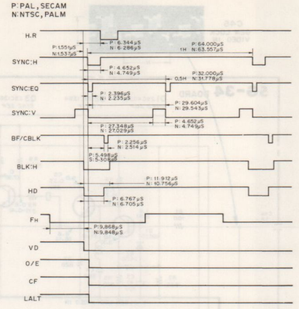
INTUPS EXT	TEST	FUNCTION
0	0	INTERNAL
0	1	INVALID
1	0	EXT
1	1	TEST

"1" : VDD
"0" : GND

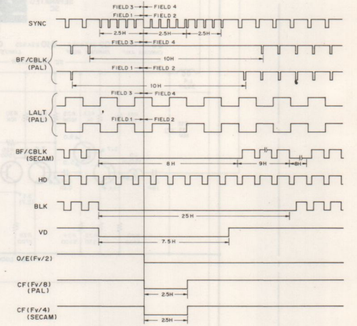
TEST "0" : OPEN / INTERNALLY (PULLED DOWN)



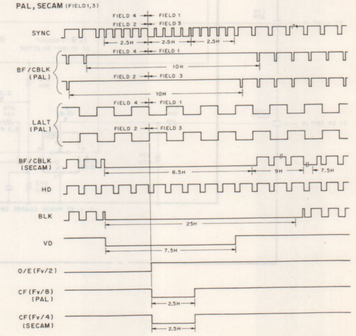
P: PAL, SECAM
N: NTSC, PALM

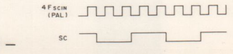


PAL, SECAM (FIELD 4, 2)



PAL, SECAM (FIELD 1, 3)





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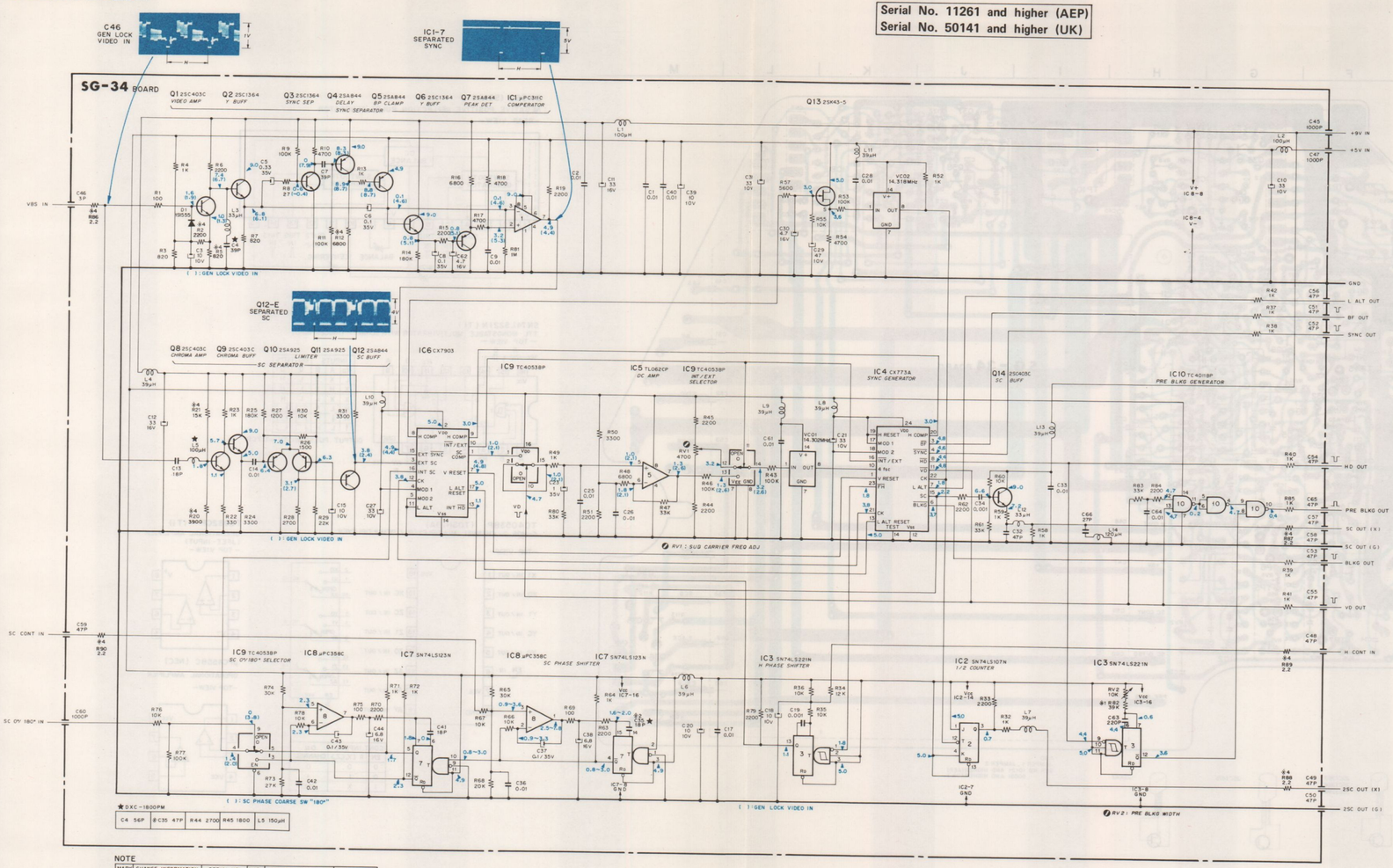
SCHEMATIC DIAGRAM

Serial No. 11261 and higher (AEP)
Serial No. 50141 and higher (UK)



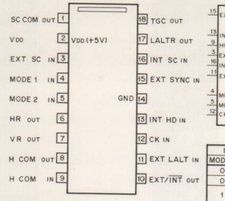
NOTE

MARK	CHANGE INFORMATION	SERIAL NO.	MARK	CHANGE INFORMATION	SERIAL NO.
※1	R82 47K → 39K	12091~ (AEP) 50221~ (UK)	※4	R2 2.4K → 2.2K R5 910 → 820 R12 6200 → 6800 R20 4300 → 3900 R21 16K → 15K R81,2,3,4,7,9 R86,87,88,89,90,2,2Ω	17221~ (AEP) 50976~ (UK)
※2	C35 47P → 18P	15601~(AEP) 50851~(UK)			
※3	IC-5 TL082CP ↓ TL062CP IC-8 TL062CP ↓ TL082CP ↓ μPC358C	16601~ (AEP) 50976~(UK)			

Note:

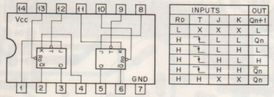
1. All voltages are dc, measured with a digital volt meter (input resistance 10 MΩ).
2. All waveforms are taken in conditions below.
   - Supply a color-bar signal to GEN LOCK IN terminal.

CX7903 (SONY)
CMOS GENLOCK DRIVER FOR CX773
— TOP VIEW —



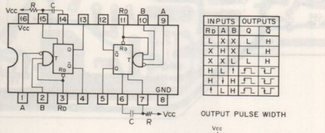
INPUTS MODE2	INPUTS MODE1	EXT LOCK MODE	
0	0	M1	PAL: VBS
0	1	M2	PAL/M: VBS
1	0	M3	PAL: VS/SC/LALT SECAM: VS/SC/LALT NTSC: VBS
1	1	M4	NTSC: VS/SC PALM: VS/SC/LALT

SN74LS107N (TI)
TTL J-K FLIP FLOP WITH DIRECT RESET
— TOP VIEW —



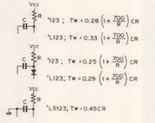
INPUTS Rd	T	J	K	OUT Qn+1
L	X	X	X	L
H	↓	L	L	Qn
H	↓	L	H	L
H	↓	H	L	H
H	↓	H	H	Qn
H	H	X	X	Qn

SN74LS123N (TI)
TTL RETRIGGERABLE MONOSTABLE MULTIVIBRATOR WITH DIRECT RESET
— TOP VIEW —

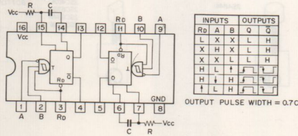


INPUTS Rd	A	B	OUTPUTS Q	Q̄
L	X	X	L	H
X	H	X	L	H
X	X	L	L	H
H	L	↑	⌐	⌐
H	H	↓	⌐	⌐
↑	L	H	⌐	⌐

OUTPUT PULSE WIDTH

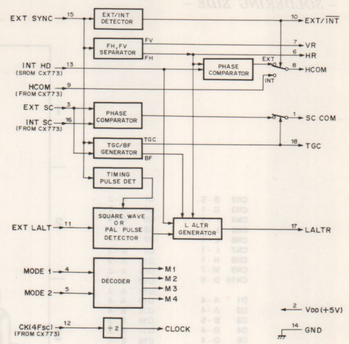


SN74LS221N (TI)
TTL MONOSTABLE MULTIVIBRATOR WITH SCHMITT TRIGGER INPUT
— TOP VIEW —

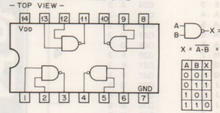


INPUTS Rd	A	B	OUTPUTS Q	Q̄
L	X	X	L	H
X	H	X	L	H
X	X	L	L	H
H	L	↑	⌐	⌐
H	H	↓	⌐	⌐
↑	L	H	⌐	⌐

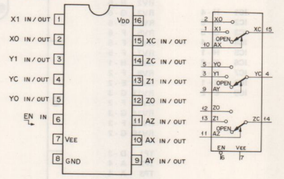
OUTPUT PULSE WIDTH = 0.7CR



TC4011BP (TOSHIBA)
C-MOS 2-INPUT NAND GATE
— TOP VIEW —

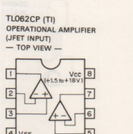


TC4053BP (TOSHIBA)
C-MOS 2-CHANNEL MULTIPLEXER / DEMULTIPLEXER
—TOP VIEW—

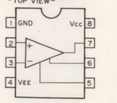


CONT. INPUTS EN	A	B (X,Y,Z)	ON CHANNEL
0	0	0	0
0	0	1	1
1	X	X	OPEN

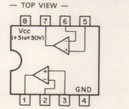
TL062CP (TI)
OPERATIONAL AMPLIFIER (JFET INPUT)
— TOP VIEW —



μPC 311C (NEC)
VOLTAGE COMPARATOR
—TOP VIEW—



μPC358C (NEC)
DUAL OPERATIONAL AMPLIFIERS
— TOP VIEW —



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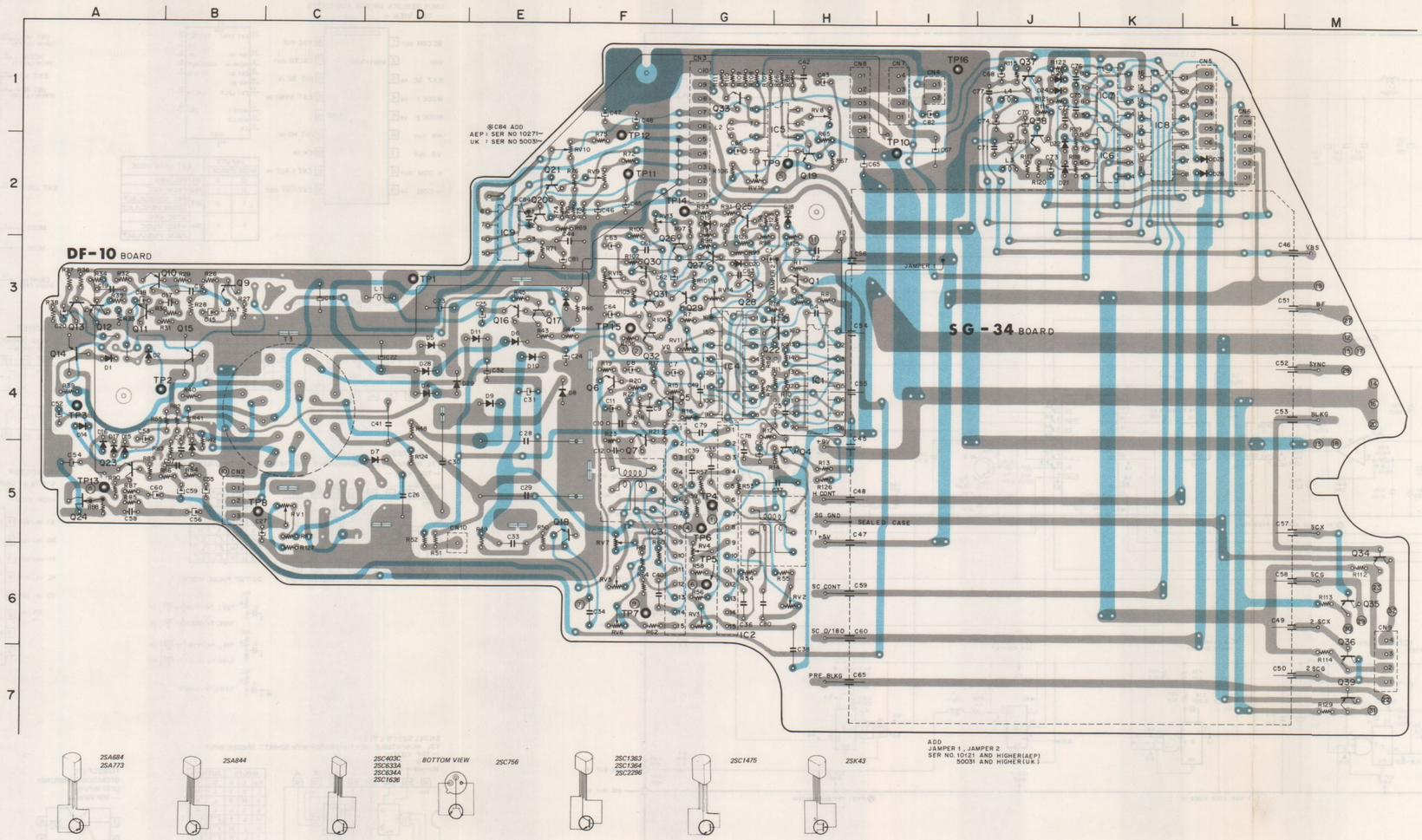
DF-10 | DXC-1800P | DXC-1800P | DF-10

4-9. DF-10 BOARD Deflection System MOUNTING DIAGRAM

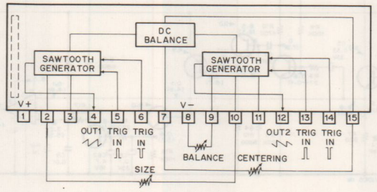
– SOLDERING SIDE –

Serial No. UP to 11260 (AEP)
Serial No. UP to 50140 (UK)

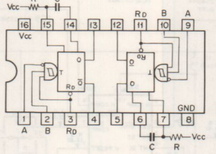


CN2	B-5	Q1	H-3	RV1	C-5
CN3	G-1	Q4	H-5	RV2	H-6
CN4	I-1	Q5	F-4	RV3	G-6
CN5	L-1	Q6	F-4	RV4	G-6
CN6	L-1	Q7	F-4	RV5	F-6
CN7	I-1	Q9	B-3	RV6	F-6
CN8	H-1	Q10	A-3	RV7	F-5
CN9	M-7	Q11	A-3	RV8	H-1
CN10	D-5	Q12	A-3	RV9	F-2
		Q13	A-3	RV10	E-2
D1	A-4	Q14	A-4	RV11	G-3
D2	A-4	Q15	B-4	RV12	F-3
D3	B-5	Q16	E-3	RV13	F-2
D4	D-4	Q17	E-3	RV14	G-3
D5	D-4	Q18	E-5	RV15	F-3
D6	E-3	Q19	H-2	RV16	G-2
D7	D-5	Q20	E-2		
D8	E-4	Q21	E-2	TP1	D-3
D9	E-4	Q22	G-3	TP2	A-4
D10	E-4	Q23	A-5	TP3	A-4
D11	E-3	Q24	A-5	TP4	G-5
D14	A-4	Q25	G-2	TP5	G-6
D15	A-5	Q26	G-3	TP6	G-5
D16	A-5	Q27	G-3	TP7	F-6
D17	A-5	Q28	G-3	TP8	B-5
D18	H-2	Q30	F-3	TP9	H-2
D19	G-2	Q31	F-3	TP10	I-2
D20	G-3	Q32	F-3	TP11	F-2
D21	J-2	Q33	G-1	TP12	F-1
D22	J-2	Q34	M-6	TP13	A-5
D23	J-1	Q35	M-6	TP14	G-2
D24	J-1	Q36	M-7	TP15	F-3
D25	L-2	Q37	J-1	TP16	I-1
D26	L-2	Q38	J-1		
D27	E-3	Q39	M-7		
D28	D-4				
D29	D-4				
IC1	H-4				
IC2	G-5				
IC3	G-5				
IC4	G-4				
IC5	H-1				
IC6	K-2				
IC7	K-1				
IC8	K-1				
IC9	E-2				

BX369 (SONY)
NEGATIVE POSITIVE DEFLECTION PULSE GENERATOR
–REAR VIEW–



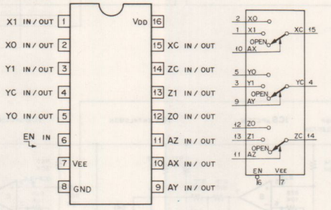
SN74LS221N (TI)
TTL MONOSTABLE MULTIVIBRATOR WITH SCHMITT TRIGGER INPUT
– TOP VIEW –



INPUTS			OUTPUTS	
Rᴅ	A	B	Q	Q
L	X	X	L	H
X	H	X	L	H
X	X	L	L	H
H	L	↓	⌐	⌐
H	↓	H	⌐	⌐
↑	L	H	⌐	⌐

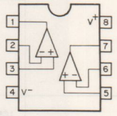
OUTPUT PULSE WIDTH = 0.7CR

TC4053BP (TOSHIBA)
C-MOS 2-CHANNEL MULTIPLEXER / DEMULTIPLEXER
–TOP VIEW–

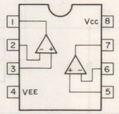


CONT. INPUTS			ON
EN	A (X,Y,Z)		CHANNEL
0	0		0
0	1		1
1	X		OPEN

TL082CP (TI)
OPERATIONAL AMPLIFIER
(JFET-INPUT)
– TOP VIEW –



μPC4558C (NEC)
OPERATIONAL AMPLIFIER
–TOP VIEW–



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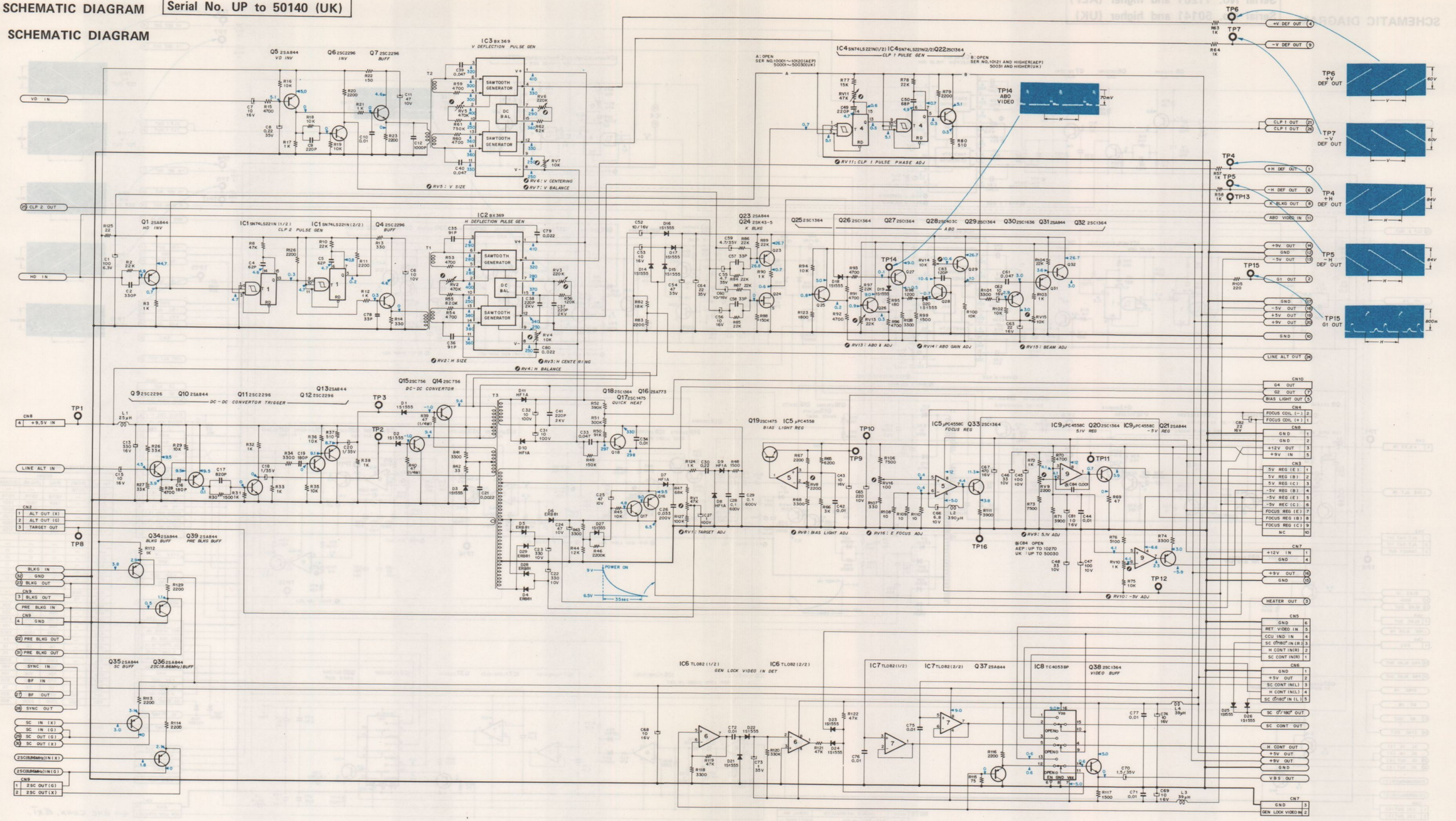
Serial No. UP to 11260 (AEP)
Serial No. UP to 50140 (UK)

SCHEMATIC DIAGRAM

SCHEMATIC DIAGRAM



Note:

1. All voltages are dc, measured with a digital volt meter (input resistance 10 MΩ).
2. All waveforms are taken in conditions below.
   - Shoot the color-bar pattern where a white bar is illuminated by 3200°K lamp for 706 $^{+25}_{-47}$ cd/m² (nt). Adjust lens iris so that a video level at TP1/PR-25 board is 200 mV.
   - Specified picture size, referring to section 3-9-6 in **DXC-1800P technical manual**
   - Set camera GAIN switch to 0 dB position.

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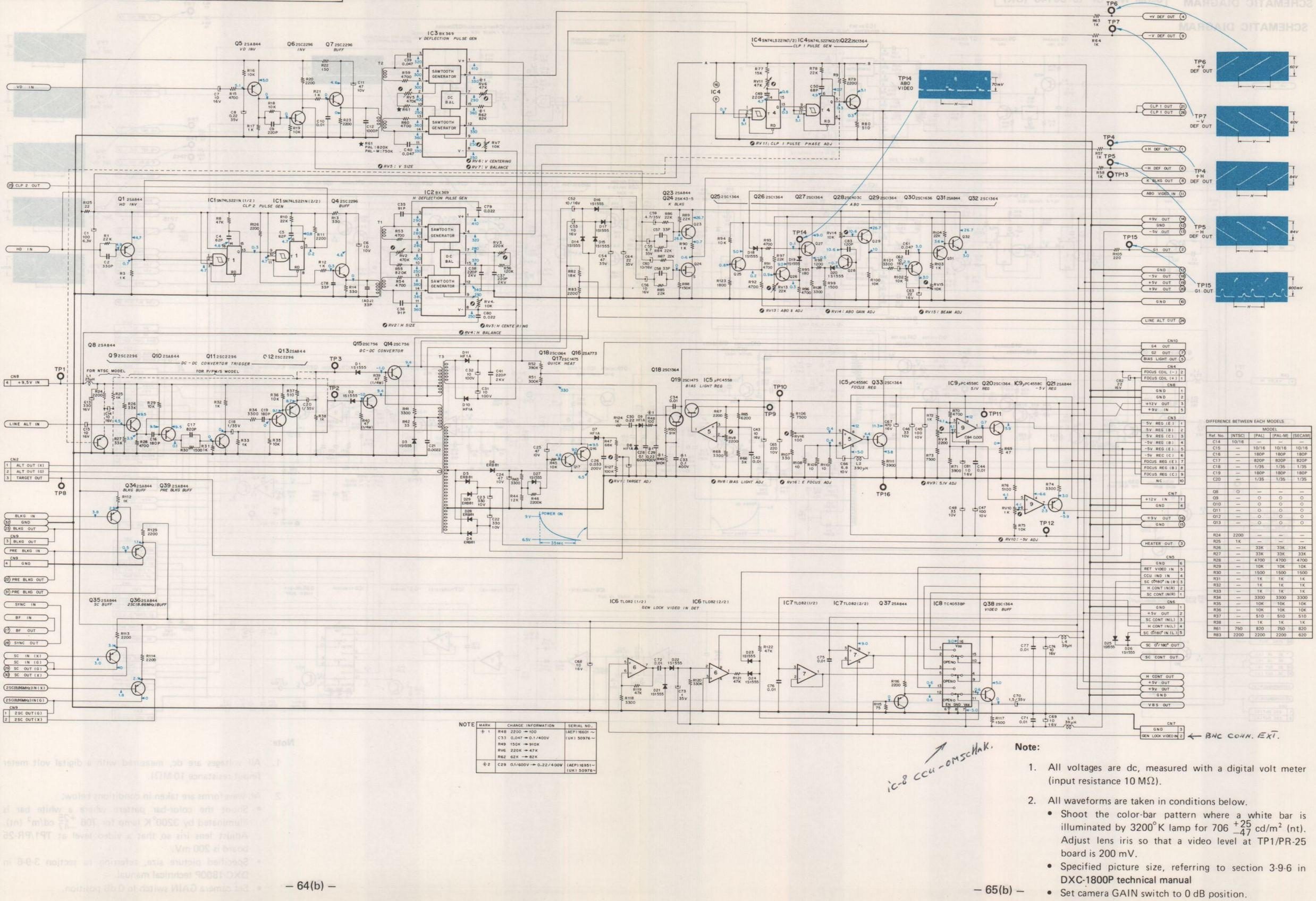
SCHEMATIC DIAGRAM

Serial No. 11261 and higher (AEP)
Serial No. 50141 and higher (UK)



NOTE

MARK	CHANGE INFORMATION	SERIAL NO.
◈1	R48 220Ω → 100Ω	(AEP) 16601 ~
	C33 0.047 → 0.1/400V	(UK) 50976 ~
	R49 150K → 910K	
	RV6 220K → 47K	
	R62 62K → 82K	
◈2	C29 0.1/600V → 0.22/400V	(AEP) 16951 ~ (UK) 50976 ~

DIFFERENCE BETWEEN EACH MODELS

Ref. No.	MODEL [NTSC]	[PAL]	[PAL-M]	[SECAM]
C14	10/16	—	—	—
C15	—	10/16	10/16	10/16
C16	—	180P	180P	180P
C17	—	820P	820P	820P
C18	—	1/35	1/35	1/35
C19	—	180P	180P	180P
C20	—	1/35	1/35	1/35
Q8	○	—	—	—
Q9	—	○	○	○
Q10	—	○	○	○
Q11	—	○	○	○
Q12	—	○	○	○
Q13	—	○	○	○
R24	2200	—	—	—
R25	1K	—	—	—
R26	—	33K	33K	33K
R27	—	33K	33K	33K
R28	—	4700	4700	4700
R29	—	10K	10K	10K
R30	—	1500	1500	1500
R31	—	1K	1K	1K
R32	—	1K	1K	1K
R33	—	1K	1K	1K
R34	—	3300	3300	3300
R35	—	10K	10K	10K
R36	—	10K	10K	10K
R37	—	510	510	510
R38	—	1K	1K	1K
R61	750	820	750	820
R83	2200	2200	2200	620

ic-8 CCU-OMSCHAK.

Note:

1. All voltages are dc, measured with a digital volt meter (input resistance 10 MΩ).
2. All waveforms are taken in conditions below.
   - Shoot the color-bar pattern where a white bar is illuminated by 3200°K lamp for 706 $^{+25}_{-47}$ cd/m² (nt). Adjust lens iris so that a video level at TP1/PR-25 board is 200 mV.
   - Specified picture size, referring to section 3-9-6 in **DXC-1800P technical manual**
   - Set camera GAIN switch to 0 dB position.

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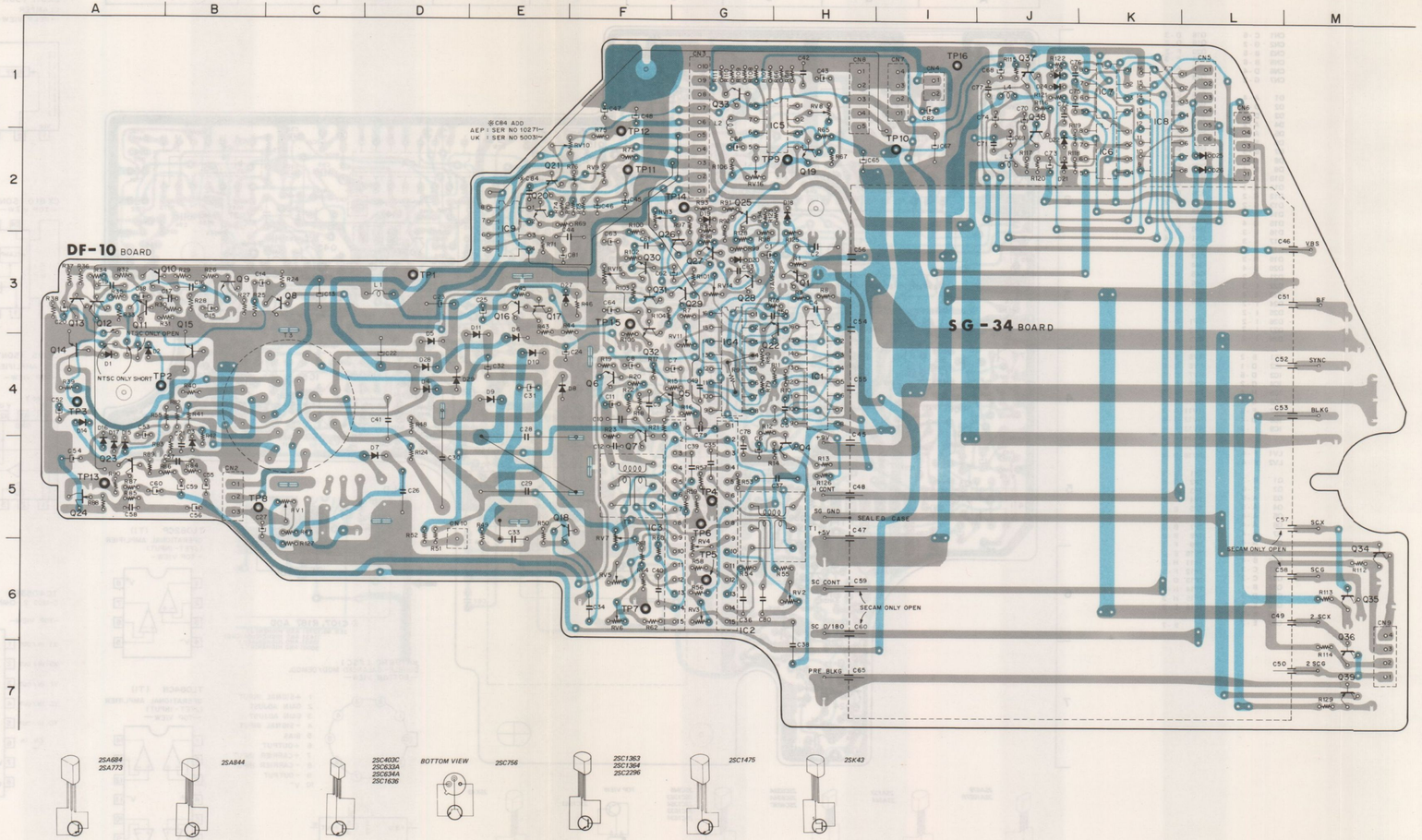
DF-10 BOARD MOUNTING DIAGRAM

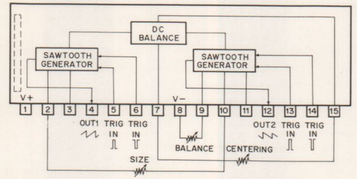
– SOLDERING SIDE –

Serial No. 11261 and higher (AEP)
Serial No. 50141 and higher (UK)

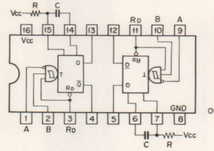


CN2	B-5	Q1	H-3
CN3	G-1	Q4	H-5
CN4	I-1	Q5	F-4
CN5	L-1	Q6	F-4
CN6	L-1	Q7	F-4
CN7	I-1	Q9	B-3
CN8	H-1	Q10	A-3
CN9	M-7	Q11	A-3
CN10	D-5	Q12	A-3
		Q13	A-3
D1	A-4	Q14	A-4
D2	A-4	Q15	B-4
D3	B-5	Q16	E-3
D4	D-4	Q17	E-3
D5	D-4	Q18	E-5
D6	E-3	Q19	H-2
D7	D-5	Q20	E-2
D8	E-4	Q21	E-2
D9	E-4	Q22	G-3
D10	E-4	Q23	A-5
D11	E-3	Q24	A-5
D14	A-4	Q25	G-2
D15	A-5	Q26	G-3
D16	A-5	Q27	G-3
D17	A-5	Q28	G-3
D18	H-2	Q30	F-3
D19	G-2	Q31	F-3
D20	G-3	Q32	F-3
D21	J-2	Q33	G-1
D22	J-2	Q34	M-6
D23	J-1	Q35	M-6
D24	J-1	Q36	M-7
D25	L-2	Q37	J-1
D26	L-2	Q38	J-1
D27	E-3	Q39	M-7
D28	D-4		
D29	D-4	RV1	C-5
		RV2	H-6
IC1	H-4	RV3	G-6
IC2	G-5	RV4	G-6
IC3	G-5	RV5	F-6
IC4	G-4	RV6	F-6
IC5	H-1	RV7	F-5
IC6	K-2	RV8	H-1
IC7	K-1	RV9	F-2
IC8	K-1	RV10	E-2
IC9	E-2	RV11	G-3
		RV13	F-2
		RV14	G-3
		RV15	F-3
		RV16	G-2
		TP1	D-3
		TP2	A-4
		TP3	A-4
		TP4	G-5
		TP5	G-6
		TP6	G-5
		TP7	F-6
		TP8	B-5
		TP9	H-2
		TP10	I-2
		TP11	F-2
		TP12	F-1
		TP13	A-5
		TP14	G-2
		TP15	F-3
		TP16	I-1

BX369 (SONY)
NEGATIVE POSITIVE DEFLECTION PULSE GENERATOR
–REAR VIEW–



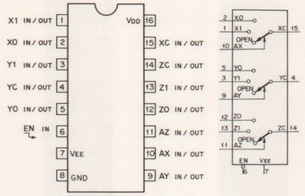
SN74LS221N (TI)
TTL MONOSTABLE MULTIVIBRATOR WITH SCHMITT TRIGGER INPUT
– TOP VIEW –



INPUTS			OUTPUTS	
Rext/Cext	A	B	Q	Q
L	X	X	L	H
X	H	X	L	H
X	X	L	L	H
H	L	↑	⌐	⌐
H	L	H	⌐	⌐
↑	L	H	⌐	⌐

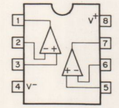
OUTPUT PULSE WIDTH = 0.7CR

TC4053BP (TOSHIBA)
C-MOS 2-CHANNEL MULTIPLEXER / DEMULTIPLEXER
–TOP VIEW–

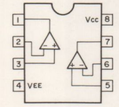


CONT. INPUTS		ON
EN	A (X,Y,Z)	CHANNEL
0	0	0
0	1	1
1	X	OPEN

TL082CP (TI)
OPERATIONAL AMPLIFIER
(JFET-INPUT)
– TOP VIEW –



μPC4558C (NEC)
OPERATIONAL AMPLIFIER
–TOP VIEW–



DIFFERENCE BETWEEN EACH MODELS

	MODEL			
Ref. No.	[NTSC]	[PAL]	[PAL-M]	[SECAM]
C14	10/16	—	—	—
C15	—	10/16	10/16	10/16
C16	—	180P	180P	180P
C17	—	820P	820P	820P
C18	—	1/35	1/35	1/35
C19	—	180P	180P	180P
C20	—	1/35	1/35	1/35
Q8	○	—	—	—
Q9	—	○	○	○
Q10	—	○	○	○
Q11	—	○	○	○
Q12	—	○	○	○
Q13	—	○	○	○
R24	2200	—	—	—
R25	1K	—	—	—
R26	—	33K	33K	33K
R27	—	33K	33K	33K
R28	—	4700	4700	4700
R29	—	10K	10K	10K
R30	—	1500	1500	1500
R31	—	1K	1K	1K
R32	—	1K	1K	1K
R33	—	1K	1K	1K
R34	—	3300	3300	3300
R35	—	10K	10K	10K
R36	—	10K	10K	10K
R37	—	510	510	510
R38	—	1K	1K	1K
R61	750	820	750	820
R83	2200	2200	2200	620

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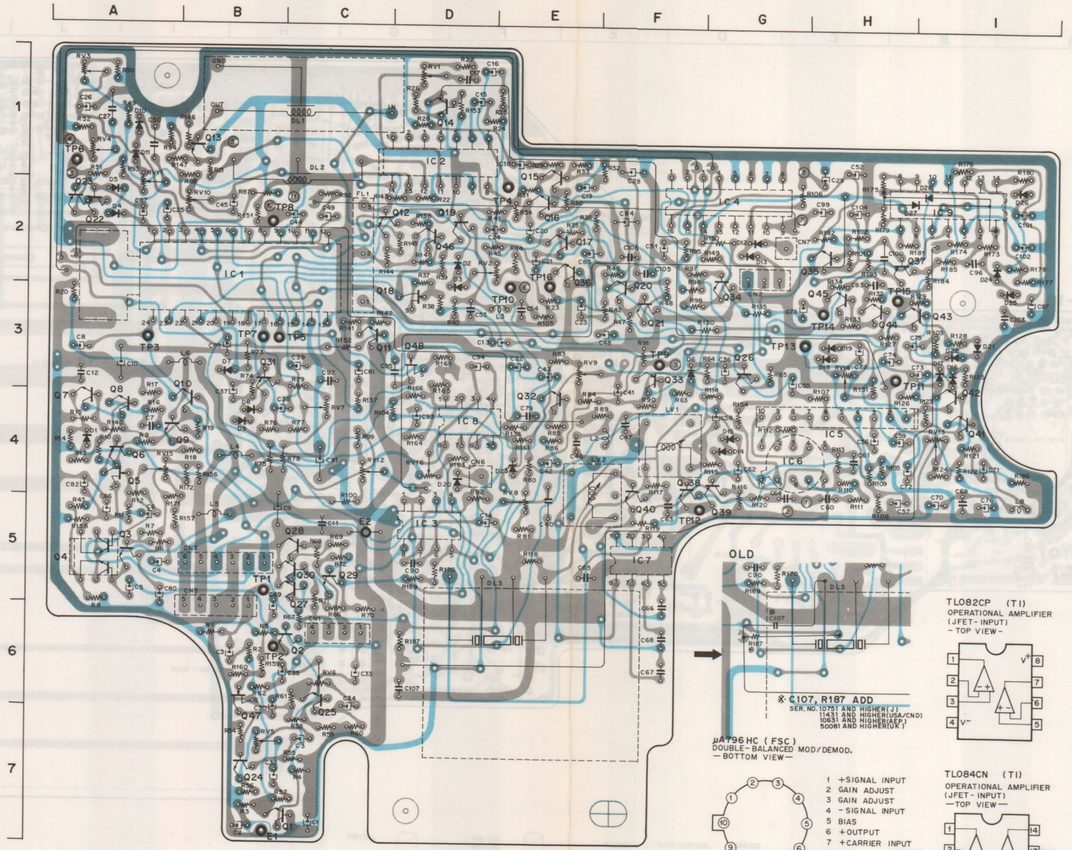
PR-25 | DXC-1800P | DXC-1800P | PR-25

4-10. PR-25 BOARD Y Signal System MOUNTING DIAGRAM

– SOLDERING SIDE –

Serial No. UP to 12850 (AEP)
Serial No. UP to 50291 (UK)



CN1 C-6
CN2 G-2
CN3 B-5
CN5 B-6
CN6 D-4
CN7 G-2

D1 A-4
D2 D-2
D3 D-2
D4 A-2
D5 A-2
D6 F-3
D7 B-3
D8 B-4
D9 B-4
D10 A-1
D11 A-1
D12 G-2
D13 G-2
D14 G-4
D15 G-4
D16 I-3
D17 I-3
D18 H-3
D19 H-3
D20 D-4
D21 I-3
D22 I-3
D23 E-4
D24 I-2
D25 I-2
D26 I-2
D27 I-2
D28 I-2

IC1 B-2
IC2 D-1
IC3 D-5
IC4 G-2
IC5 H-4
IC6 G-4
IC7 F-5
IC8 D-4
IC9 I-2

LV1 F-4
LV2 E-4

Q1 B-7
Q2 C-6
Q3 A-5
Q4 A-5
Q5 A-4
Q6 A-4
Q7 A-4
Q8 A-4
Q9 A-4
Q10 B-4
Q11 C-3
Q12 C-2
Q13 B-1
Q14 D-1
Q15 E-1
Q16 E-2
Q17 E-2
Q18 D-3
Q19 D-2
Q20 F-2
Q21 F-3
Q22 A-2
Q23 A-2
Q24 B-7
Q25 C-6
Q26 G-3
Q27 C-5
Q28 C-5
Q29 C-5
Q30 C-5
Q31 B-3
Q32 E-4
Q33 F-3
Q34 G-2
Q35 H-2
Q36 E-2
Q37 H-2
Q38 F-4
Q39 G-4
Q40 F-4
Q41 I-4
Q42 I-3
Q43 H-3
Q44 H-3
Q45 H-3
Q46 D-2
Q47 B-6
Q48 D-3

RV1 D-1
RV2 D-2
RV3 A-1
RV4 A-1
RV5 B-7
RV6 C-6
RV7 C-4
RV8 E-4
RV9 E-3
RV10 B-2
RV11 A-2
RV12 C-4
RV13 I-4
RV14 H-3
RV15 A-4
RV16 D-4

TP1 B-5
TP2 B-6
TP3 A-3
TP4 E-2
TP5 B-3
TP6 A-1
TP7 B-3
TP8 B-2
TP9 F-3
TP10 E-2
TP11 H-3
TP12 F-5
TP13 G-3
TP14 H-3
TP15 H-3
TP16 E-2

E1 B-7

2SA678
2SA1027R

2SA733
2SA844

2SC633A
2SC634A
2SC403C

2SC945
2SC1363
2SC1364
2SC1633
2SC1634

TOP VIEW
2SC1963

2SK43

μA796HC (FSC)
DOUBLE-BALANCED MOD/DEMOD.
— BOTTOM VIEW —

1 +SIGNAL INPUT
2 GAIN ADJUST
3 GAIN ADJUST
4 −SIGNAL INPUT
5 BIAS
6 +OUTPUT
7 +CARRIER INPUT
8 −CARRIER INPUT
9 −OUTPUT
10 V⁻

TL082CP (TI)
OPERATIONAL AMPLIFIER
(JFET-INPUT)
— TOP VIEW —

TL084CN (TI)
OPERATIONAL AMPLIFIER
(JFET-INPUT)
— TOP VIEW —

BX311 (SONY)
CLAMPER
—REAR VIEW—

CX810 (SONY)
—TOP VIEW—

CX815 (SONY)
DTL AMPLIFIER
—TOP VIEW—

SN16913P (TI)
BALANCED MIXER
— TOP VIEW —

TC4053BP (TOSHIBA)
C-MOS 2-CHANNEL MULTIPLEXER / DEMULTIPLEXER
—TOP VIEW—

CONT. INPUTS			ON
EN	A (X,Y,Z)		CHANNEL
0	0		0
0	1		1
1	X		OPEN

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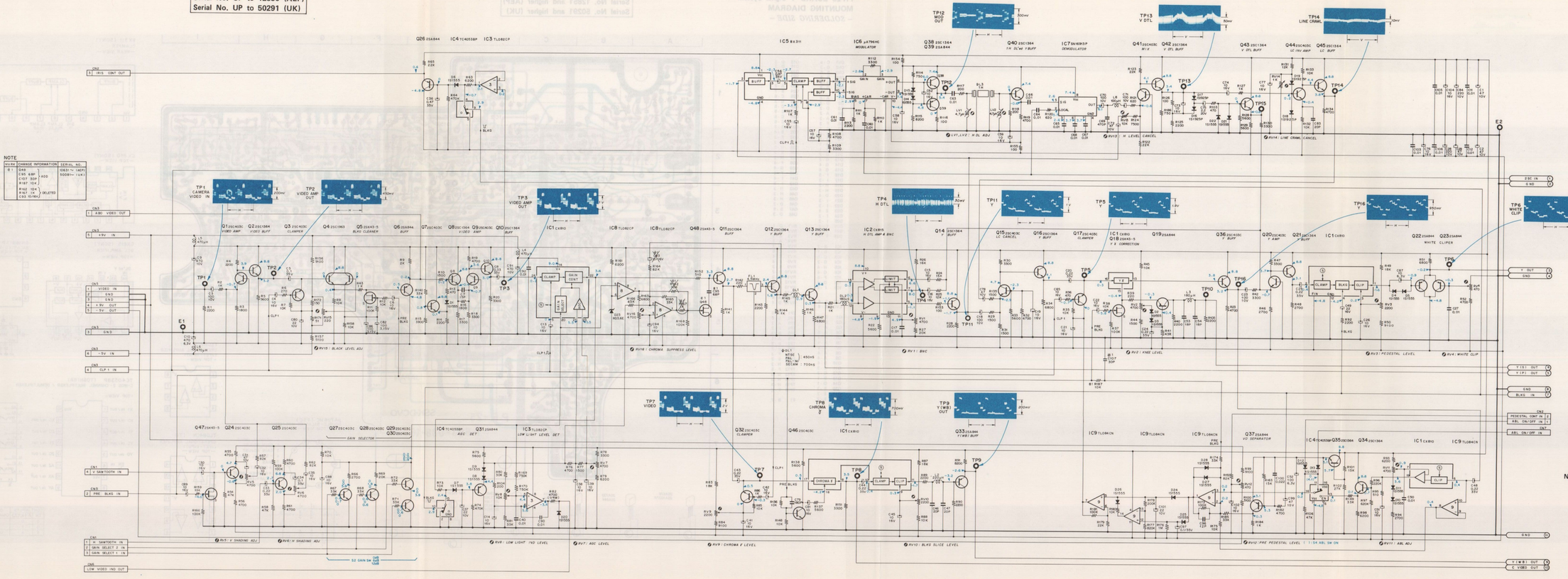
SCHEMATIC DIAGRAM

Serial No. UP to 12850 (AEP)
Serial No. UP to 50291 (UK)

PR-25 | DXC-1800P | DXC-1800P | PR-25



Note:

1. All voltages are dc, measured with a digital volt meter (input resistance 10 MΩ).
2. All waveforms are taken in conditions below.
   - Shoot the color-bar pattern where a white bar is illuminated by 3200°K lamp for 706 $^{+25}_{-47}$ cd/m² (nt). Adjust lens iris so that a video level at TP1/PR-25 board is 200 mV.
   - Specified picture size, referring to section 3-9-6 in DXC-1800P technical manual
   - Set camera GAIN switch to 0 dB position.

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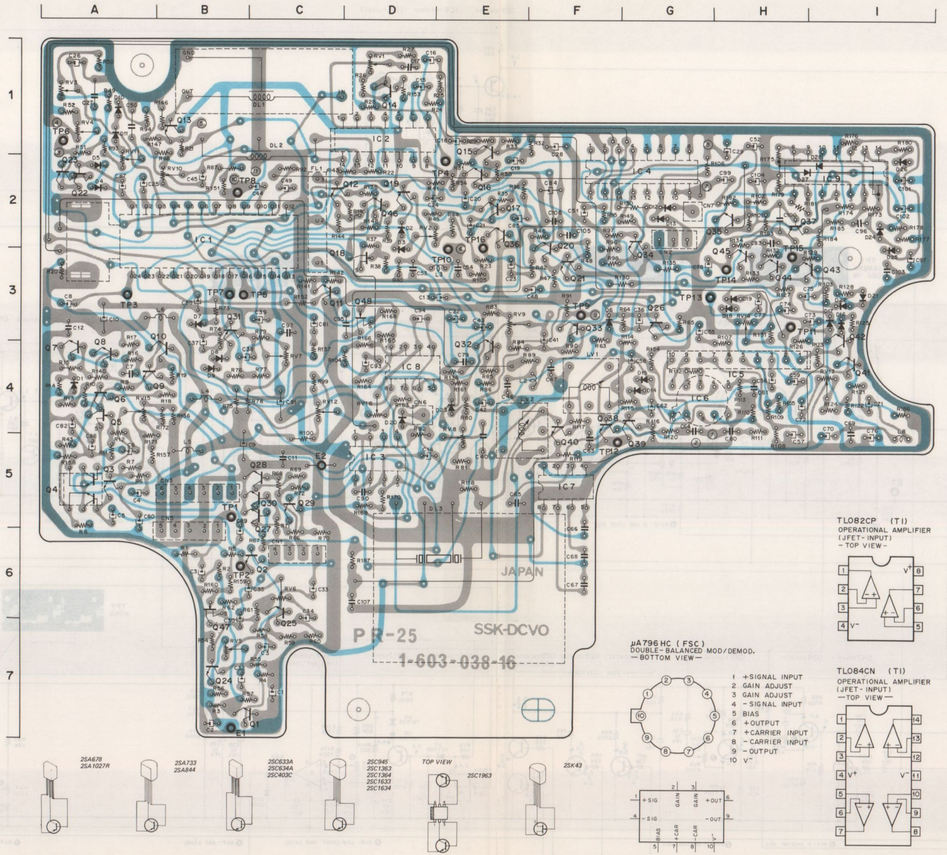
PR-25 DXC-1800P DXC-1800P PR-25

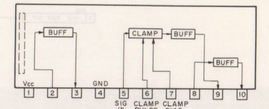
PR-25 BOARD Y Signal System MOUNTING DIAGRAM

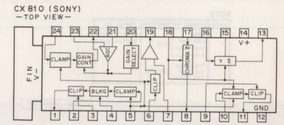
– SOLDERING SIDE –

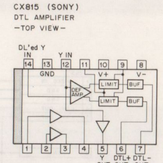
Serial No. 12851 and higher (AEP)
Serial No. 50291 and higher (UK)

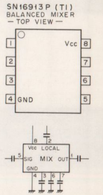
CN1	C-6	Q18	D-3		
CN2	G-2	Q19	D-2		
CN3	B-5	Q20	F-2		
CN5	B-6	Q21	F-3		
CN6	D-4	Q22	A-2		
CN7	G-2	Q23	A-2		
		Q24	B-7		
D1	A-4	Q25	C-6		
D2	D-2	Q26	G-3		
D3	D-2	Q27	C-5		
D4	A-2	Q28	C-5		
D5	A-2	Q29	C-5		
D6	F-3	Q30	C-5		
D7	B-3	Q31	B-3		
D8	B-4	Q32	E-4		
D9	B-4	Q33	F-3		
D10	A-1	Q34	G-2		
D11	A-1	Q35	H-2		
D12	G-2	Q36	E-2		
D13	G-2	Q37	H-2		
D14	G-4	Q38	F-4		
D15	G-4	Q39	G-4		
D16	I-3	Q40	F-4		
D17	I-3	Q41	I-4		
D18	H-3	Q42	I-3		
D19	H-3	Q43	H-3		
D20	D-4	Q44	H-3		
D21	I-3	Q45	H-3		
D22	I-3	Q46	D-2		
D23	E-4	Q47	B-6		
D24	I-2	Q48	D-3		
D25	I-2				
D26	I-2	RV1	D-1		
D27	I-2	RV2	D-2		
D28	I-2	RV3	A-1		
		RV4	A-1		
IC1	B-2	RV5	B-7		
IC2	D-1	RV6	C-6		
IC3	D-5	RV7	C-4		
IC4	G-2	RV8	E-4		
IC5	H-4	RV9	E-3		
IC6	G-4	RV10	B-2		
IC7	F-5	RV11	A-2		
IC8	D-4	RV12	C-4		
IC9	I-2	RV13	I-4		
		RV14	H-3		
LV1	F-4	RV15	A-4		
LV2	E-4	RV16	D-4		
Q1	B-7	TP1	B-5		
Q2	C-6	TP2	B-6		
Q3	A-5	TP3	A-3		
Q4	A-5	TP4	E-2		
Q5	A-4	TP5	B-3		
Q6	A-4	TP6	A-1		
Q7	A-4	TP7	B-2		
Q8	A-4	TP8	B-2		
Q9	A-4	TP9	F-2		
Q10	B-4	TP10	E-2		
Q11	C-3	TP11	H-3		
Q12	C-2	TP12	F-6		
Q13	B-1	TP13	G-3		
Q14	D-1	TP14	H-3		
Q15	E-1	TP15	H-3		
Q16	E-2	TP16	E-2		
Q17	E-2	E1	B-7		

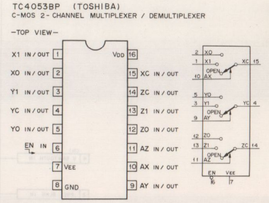












CONT. INPUTS			ON
EN	A (X,Y,Z)		CHANNEL
0	0		0
0	1		1
1	X		OPEN

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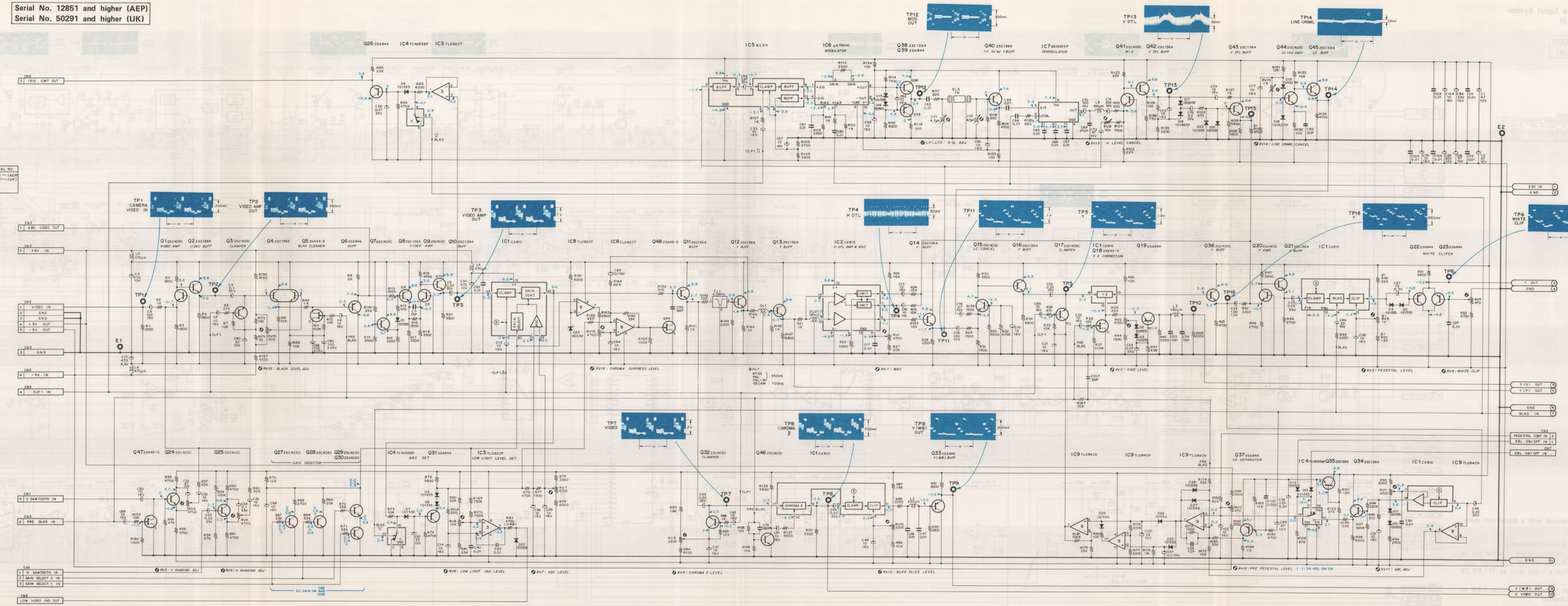
PR-25 | DXC-1800P | DXC-1800P | PR-25

SCHEMATIC DIAGRAM

Serial No. 12851 and higher (AEP)
Serial No. 50291 and higher (UK)

NOTE

MARK	CHANGE INFORMATION	SERIAL NO.
※ 1	R49 18K → 22K R50 9100 → 15K R125 2200 → 1K R130 3300 → 4700	13561 ~ (AEP) 50491 ~ (UK)



Note:

1. All voltages are dc, measured with a digital volt meter (input resistance 10 MΩ).
2. All waveforms are taken in conditions below.
   - Shoot the color-bar pattern where a white bar is illuminated by 3200°K lamp for 706 $^{+25}_{-17}$ cd/m² (nt). Adjust lens iris so that a video level at TP1/PR-25 board is 200 mV.
   - Specified picture size, referring to section 3-9-6 in DXC-1800P technical manual
   - Set camera GAIN switch to 0 dB position.

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4-11. CR-11 BOARD Chroma Signal System SCHEMATIC DIAGRAM

Serial No. UP to 11260 (AEP)
Serial No. UP to 50140 (UK)

NOTE

MARK	CHANGE INFORMATION	SERIAL NO.
B1	R272 100 ±5%	10001~(AEP) 50001~(UK)
B2	R24 4300 ±5%	10781~(AEP) 50061~(UK)

Note:

1. All voltages are dc, measured with a digital volt meter (input resistance 10 MΩ).
2. All waveforms are taken in conditions below.
   - Shoot the color-bar pattern where a white bar is illuminated by 3200°K lamp for 706 $^{+25}_{-47}$ cd/m² (nt). Adjust lens iris so that a video level at TP1/PR-25 board is 200 mV.
   - Specified picture size, referring to section 3-9-6 in DXC-1800P technical manual
   - Set camera GAIN switch to 0 dB position.

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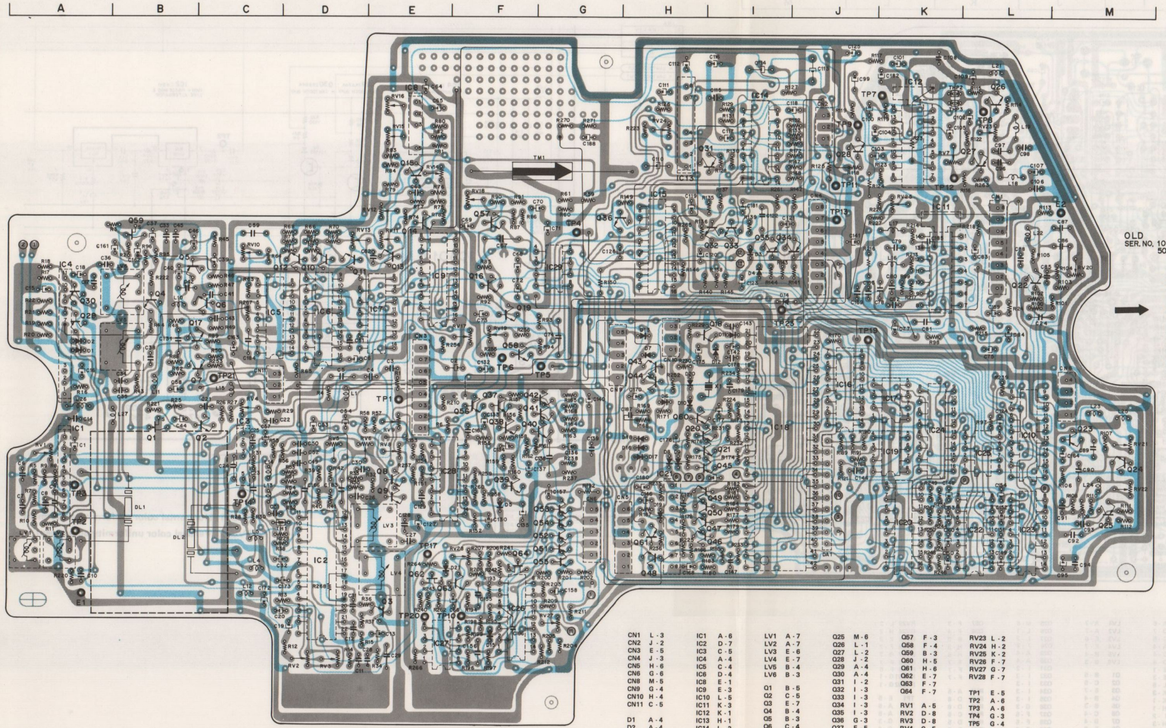
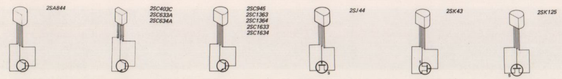
CR-11 BOARD Chroma Signal System
MOUNTING DIAGRAM
– SOLDERING SIDE –

Serial No. UP to 11260 (AEP)
Serial No. UP to 50140 (UK)



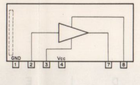


CN1 L-3	IC1 A-6	LV1 A-7	Q25 M-6	Q57 F-3	RV23 L-2
CN2 J-2	IC2 D-7	LV2 A-7	Q26 L-1	Q58 F-4	RV24 H-2
CN3 E-5	IC3 C-5	LV3 E-6	Q27 L-2	Q59 B-3	RV25 K-2
CN4 J-3	IC4 A-4	LV4 E-7	Q28 J-2	Q60 H-5	RV26 F-7
CN5 H-8	IC5 C-4	LV5 B-4	Q29 A-4	Q61 H-6	RV27 G-7
CN6 G-8	IC6 D-4	LV6 B-3	Q30 A-4	Q62 E-7	RV28 F-7
CN8 M-5	IC8 E-1		Q31 I-2	Q63 F-7	
CN9 G-4	IC9 E-3	Q1 B-5	Q32 I-3	Q64 F-7	TP1 E-5
CN10 H-4	IC10 L-5	Q2 C-5	Q33 I-3		TP2 A-6
CN11 C-5	IC11 K-3	Q3 E-7	Q34 I-3	RV1 A-5	TP3 A-6
	IC12 K-1	Q4 B-4	Q35 I-3	RV2 D-8	TP4 G-3
D1 A-4	IC13 H-1	Q5 B-3	Q36 G-3	RV3 D-8	TP5 G-4
D2 A-4	IC14 I-7	Q6 C-4	Q37 F-5	RV4 C-5	TP6 F-4
D3 I-3	IC15 H-3	Q7 B-4	Q38 F-5	RV5 D-5	TP7 K-1
D4 I-3	IC16 J-5	Q8 E-6	Q39 F-6	RV6 D-5	TP8 L-1
D5 F-6	IC17 K-5	Q9 E-6	Q40 G-5	RV7 K-2	TP9 J-1
D6 H-5	IC18 I-6	Q10 D-3	Q41 G-5	RV8 E-4	TP10 F-7
D7 H-4	IC19 K-5	Q11 D-3	Q42 G-5	RV9 E-5	TP11 J-2
D8 H-5	IC20 K-6	Q12 D-3	Q43 H-4	RV10 C-3	TP12 K-2
D9 H-5	IC21 H-6	Q13 E-3	Q44 H-4	RV11 E-3	TP13 J-3
D10 H-6	IC22 L-6	Q14 E-3	Q45 H-5	RV12 E-3	TP14 C-6
D11 I-4	IC23 L-6	Q15 E-2	Q46 H-6	RV13 D-3	TP17 E-7
D12 I-4	IC24 K-5	Q16 F-3	Q47 H-6	RV14 E-2	TP18 J-4
D13 H-4	IC25 L-5	Q17 B-4	Q48 H-7	RV15 E-2	TP20 E-7
D15 F-8	IC26 F-7	Q18 H-4	Q49 H-6	RV16 E-1	TP21 C-5
D16 H-5	IC27 E-8	Q19 F-4	Q50 H-6	RV17 F-4	TP23 I-4
D17 H-5	IC28 E-6	Q20 H-5	Q51 G-6	RV18 F-2	
D18 H-5	IC29 G-3	Q21 H-5	Q52 G-6	RV19 F-4	E1 A-7
D19 H-6		Q22 L-3	Q53 G-6	RV20 M-3	E2 M-2
D20 H-5		Q23 M-5	Q54 G-6	RV21 M-5	
D21 E-7		Q24 M-5	Q56 F-5	RV22 M-6	

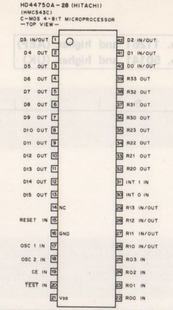
CR-11	DXC-1800P	DXC-1800P	CR-11

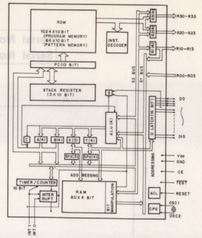
BX306 (SONY)
VIDEO AMPLIFIER
(PHASE INVERTED)
– REAR VIEW –

BX333A (SONY)
VIDEO AMPLIFIER
– REAR VIEW –

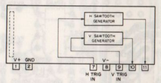


HD44750A – 28 (HITACHI)
(MMCS43C)
C-MOS 4-BIT MICROPROCESSOR
– TOP VIEW –

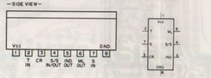




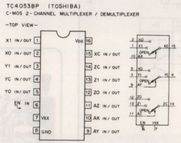
BX378 (SONY)
V/H SAWTOOTH WAVE GENERATOR
– REAR VIEW –

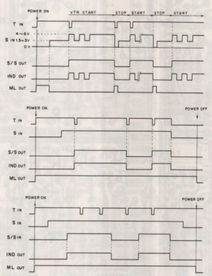


CX518 (SONY)
INTERFACE CIRCUIT BETWEEN VTR & CAMERA
– SIDE VIEW –

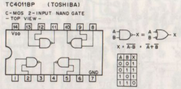


TC4053BP (TOSHIBA)
C-MOS 2-CHANNEL MULTIPLEXER / DEMULTIPLEXER
– TOP VIEW –

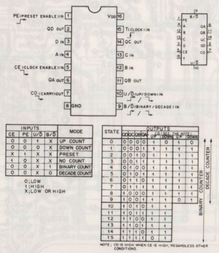




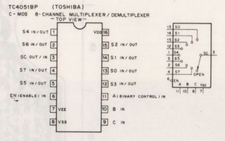
TC4001BP (TOSHIBA)
C-MOS 2-INPUT NAND GATE
– TOP VIEW –



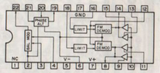
TC4029BP (TOSHIBA)
C-MOS PRESETTABLE 4-BIT BINARY/DECADE UP/DOWN COUNTER
– TOP VIEW –



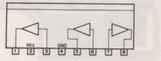
TC4051BP (TOSHIBA)
C-MOS 8-CHANNEL MULTIPLEXER / DEMULTIPLEXER
– TOP VIEW –



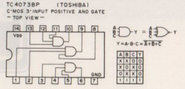
CX811 (SONY)
– TOP VIEW –



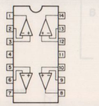
CX816 (SONY)
1H DELAY LINE DRIVER, CHROMA/INDEX AMPLIFIER
– SIDE VIEW –



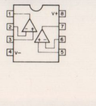
TC4073BP (TOSHIBA)
C-MOS 3-INPUT POSITIVE AND GATE
– TOP VIEW –



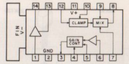
TL064CN (TI)
OPERATIONAL AMPLIFIER
(J FET-INPUT)



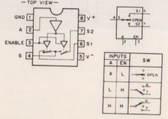
TL072CP (TI)
OPERATIONAL AMPLIFIER
(LOW-NOISE, J FET-INPUT)
– TOP VIEW –



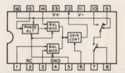
CX814 (SONY)
– TOP VIEW –



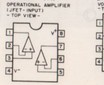
TL607CP (TI)
MOS ANALOG SWITCH
– TOP VIEW –



CX873 (SONY)
VIDEO SIGNAL PROCESSOR
– TOP VIEW –

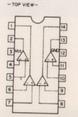


TL082CP (TI)
OPERATIONAL AMPLIFIER
(J FET-INPUT)
– TOP VIEW –



μPC311C (NEC)
VOLTAGE COMPARATOR
– TOP VIEW –

μPC339C (NEC)
COMPARATOR
– TOP VIEW –



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CR-11 BOARD MOUNTING DIAGRAM

– SOLDERING SIDE –

BX306 (SONY)
VIDEO AMPLIFIER
(PHASE INVERTED)
–REAR VIEW–

BX333A (SONY)
VIDEO AMPLIFIER
–REAR VIEW–

HD44750A-28 (HITACHI)
(HMCS43C)
4-BIT SINGLE CHIP MICROPROCESSOR
–TOP VIEW–

BX378 (SONY)
V/H SAWTOOTH WAVE GENERATOR
–REAR VIEW–

CX873 (SONY)
VIDEO SIGNAL PROCESSOR
– TOP VIEW –

CX818 (SONY)
INTERFACE CIRCUIT BETWEEN VTR & CAMERA
– SIDE VIEW –

TC4001BP (TOSHIBA)
C-MOS 2-INPUT NAND GATE
–TOP VIEW–

TC40298P (TOSHIBA)
C-MOS PRESETTABLE 4-BIT BINARY/DECADE UP/DOWN COUNTER
–TOP VIEW–

CX811 (SONY)
–TOP VIEW–

CX816 (SONY)
H DELAY LINE DRIVER, CHROMA / INDEX AMPLIFIER
– SIDE VIEW –

CX814 (SONY)
–TOP VIEW–

TC40738P (TOSHIBA)
C-MOS 3-INPUT POSITIVE AND GATE
–TOP VIEW–

TC4051BP (TOSHIBA)
C-MOS 8-CHANNEL MULTIPLEXER / DEMULTIPLEXER
–TOP VIEW–

TC4053BP (TOSHIBA)
C-MOS 2-CHANNEL MULTIPLEXER / DEMULTIPLEXER
–TOP VIEW–

TL084CN (TI)
OPERATIONAL AMPLIFIER
(J FET-INPUT)

TL072CP (TI)
OPERATIONAL AMPLIFIER
(LOW-NOISE, J FET-INPUT)
–TOP VIEW–

TL082CP (TI)
OPERATIONAL AMPLIFIER
(J FET-INPUT)
–TOP VIEW–

TL507CP (TI)
MOS ANALOG SWITCH
–TOP VIEW–

μPC311C (NEC)
VOLTAGE COMPARATOR
–TOP VIEW–

μPC339C (NEC)
COMPARATOR
–TOP VIEW–

DIFFERENCE BETWEEN EACH MODELS

Mod. No.	MODEL (NTSC)	MODEL (PAL/M)	MODEL (PAL/N)
C88	—	100P	100P
C97	—	100P	100P
C302	—	10/16	—
C303	—	10/16	—
C304	—	1/35	—
C306	—	10/16	—
C308	—	10/16	—
R16	620	680	620
R17	620	680	620
R18	620	680	620
R19	620	680	620

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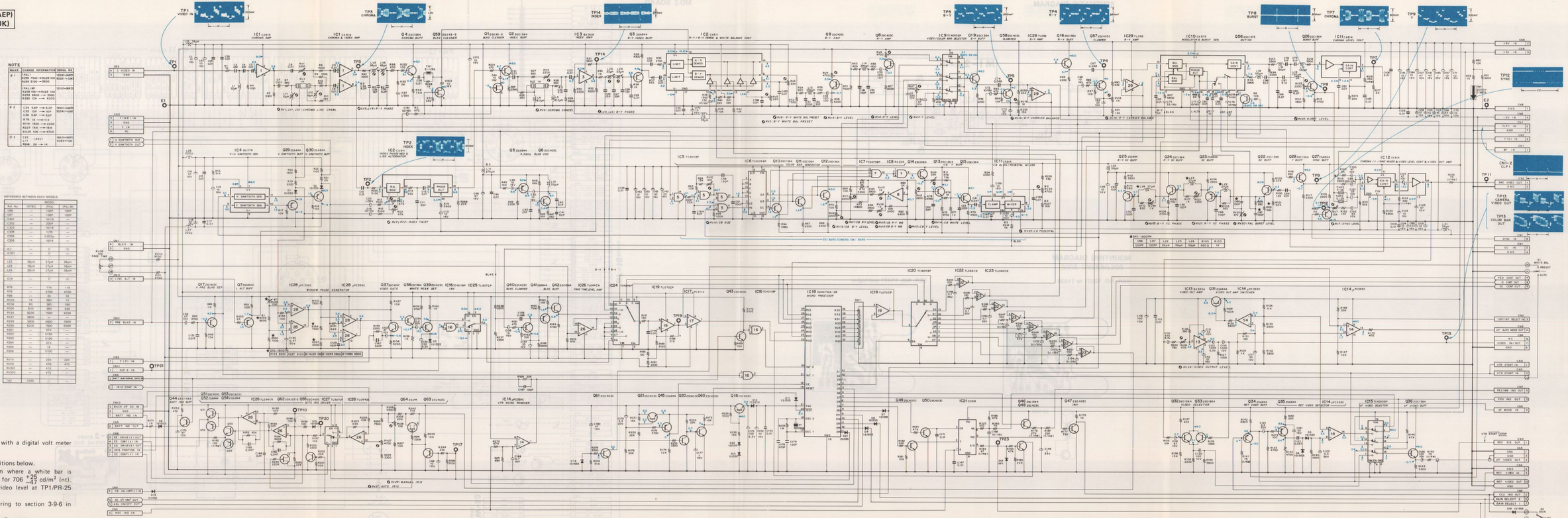
CR-11 | DXC-1800P | DXC-1800P | CR-11

SCHEMATIC DIAGRAM

Serial No. 11261 and higher (AEP)
Serial No. 50141 and higher (UK)



Note:

1. All voltages are dc, measured with a digital volt meter (input resistance 10 MΩ).
2. All waveforms are taken in conditions below.
   - Shoot the color-bar pattern where a white bar is illuminated by 3200°K lamp for 706 $^{+25}_{-47}$ cd/m² (nt). Adjust lens iris so that a video level at TP1/PR-25 board is 200 mV.
   - Specified picture size, referring to section 3-9-6 in **DXC-1800P technical manual**
   - Set camera GAIN switch to 0 dB position.

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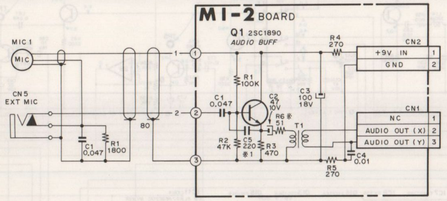
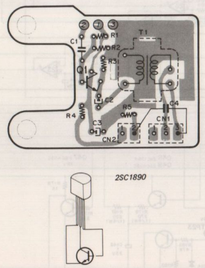
4-12. MI-2 BOARD Mic Amplifier SCHEMATIC DIAGRAM



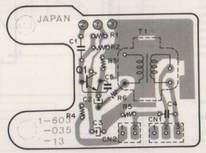
MOUNTING DIAGRAM

– SOLDERING SIDE –

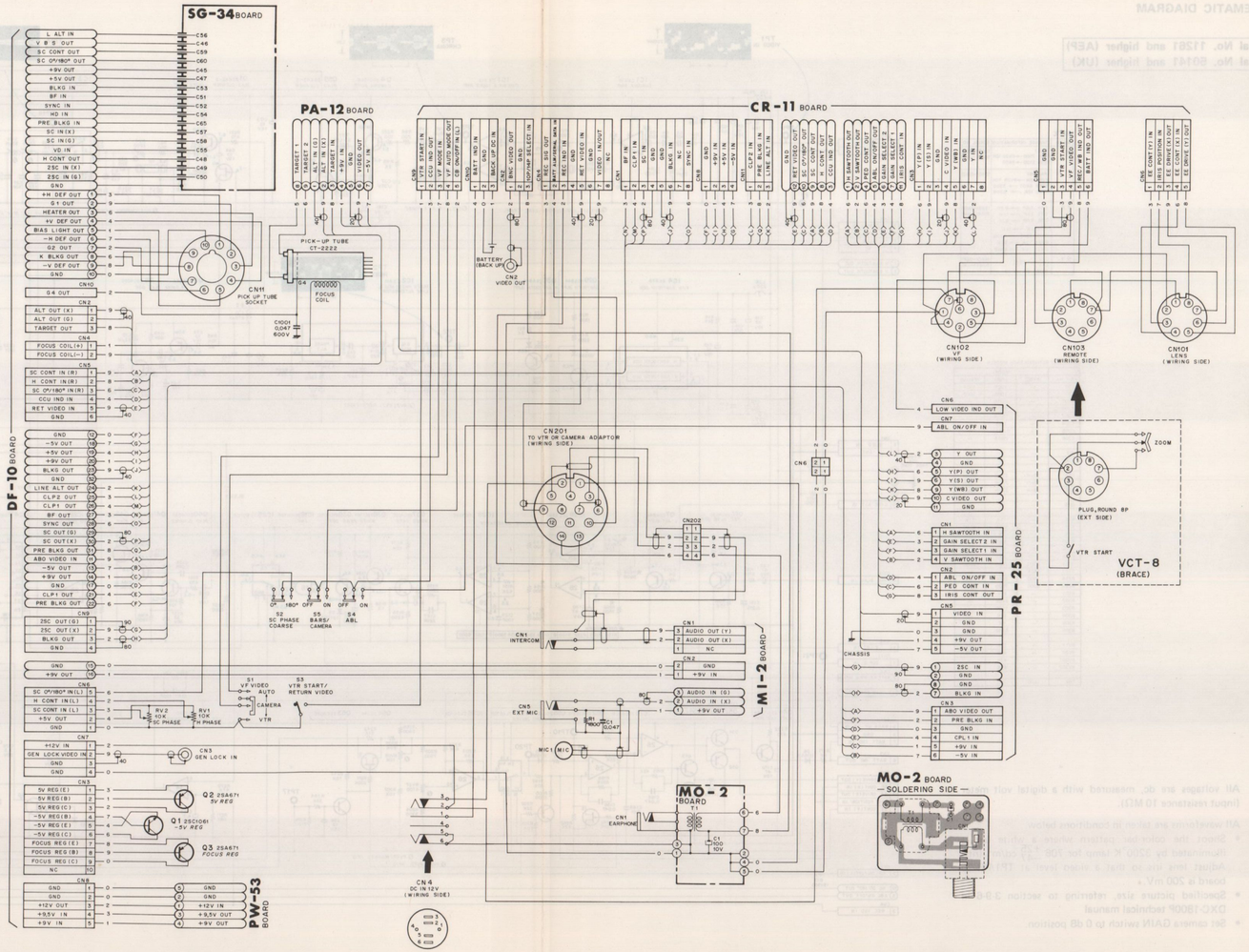
SER. NO. 10001 to 11430



SER. NO. 11431 and higher



4-13. FRAME WIRING MO-2 BOARD



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SECTION 5
SPARE PARTS AND FIXTURES

PARTS INFORMATION

1. **Safety Related Component Warning**

   Components identified by shading and ⚠-mark on the schematic diagrams, exploded views and electrical spare parts list are critical to safe operation. Replace these components with Sony parts whose part numbers appear as shown in this manual or in service bulletins and service manual supplements published by Sony.

2. Replace Parts that are supplied from Sony Parts Center can sometimes have different shape and external appearance than what are actually used in equipment. This is due to **"accomodating the improved parts and/or engineering changes"** or **"standardization of genuine parts"**.

   - This manual's exploded views and electrical spare parts list are indicating the parts numbers of "the standardized genuine parts at present".
   - Regarding engineering parts changes in our engineering department, refer Sony service bulletins and service manual supplements.

3. **Printed Components in Bold-Face type** on the exploded views and electrical spare parts list are normally stocked for replacement purposes. The remaining parts are not normally required for routine service work. Orders for parts not shown in Bold-Face type will be processed, but allow for additional delivery time.

4. Item with no part number and/or no description are not stocked because they are seldom required for routine service.

ABBREVIATION

REF. No.	DESCRIPTION	REF. No.	DESCRIPTION	REF. No.	DESCRIPTION
C	CAPACITOR	L	INDUCTOR	S	SWITCH
CN	CONNECTOR	LV	VARIABLE INDUCTOR	T	TRANSFORMER
CT	TRIMMER	ME	METER	TH	THERMISTOR
D	DIODE	MIC	MICROPHONE	THP	THERMISTOR, POSITIVE
DA	BLOCK RESISTOR	Q	TRANSISTOR	TM	TIMER
DL	DELAY LINE	R	RESISTOR	VCO	VARIABLE OSCILLATOR
FL	FILTER	RV	VARIABLE RESISTOR	X	OSCILLATOR
IC	IC	RY	RELAY		

All capacitors are in micro farads unless otherwise specified.
All inductors are in micro henries unless otherwise specified.
All resistors are in ohrms.

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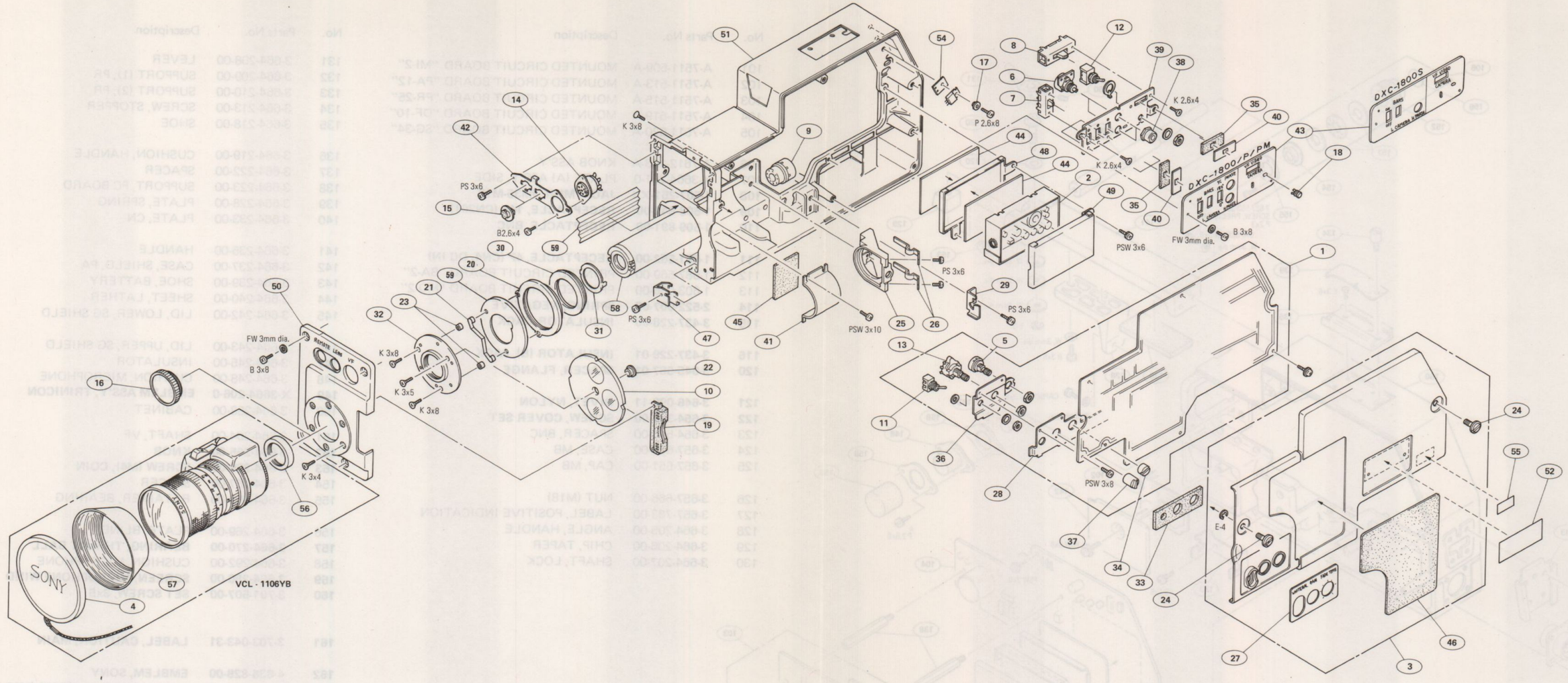
5-1. EXPLODED VIEW



No.	Parts No.	Description
1	A-7511-512-A	MOUNTED CIRCUIT BOARD "CR-11"
2	A-7511-516-A	MOUNTED CIRCUIT BOARD "PW-53"
3	X-3664-202-0	PLATE (B) ASS'Y, SIDE
4	**X-3705-053-0**	**HOOD CAP ASS'Y**
5	**1-226-916-00**	**R, VAR, CARBON 10K (RV26, FADE TIME)**
6	**1-226-917-00**	**R, VAR, CARBON 10K (RV1, H PHASE, RV2, SC PHASE FINE)**
7	**1-516-779-XX**	**SLIDE SWITCH (S2, SC PHASE, S4, ABL, S5, BARS)**
8	**1-516-781-XX**	**SLIDE SWITCH (S1, VF VIDEO)**
9	**1-526-612-00**	**SOCKET, CRT (CN11)**
10	1-547-044-00	DISK, FILTER
11	**1-553-430-00**	**SWITCH, TOGGLE (S1, WHITE BAL)**
12	**1-553-431-00**	**SWITCH, TOGGLE (S3, VTR START/RETURN VIDEO)**
13	**1-553-432-00**	**SWITCH, ROTARY (S2, GAIN)**
14	**1-561-320-00**	**RECEPTACLE, 8P, DIN (CN102, VF)**
15	**1-561-348-00**	**RECEPTACLE, 8P, (CN101, LENS, CN103, REMOTE)**

No.	Parts No.	Description
16	**2-042-385-00**	**CAP, LENS MOUNT**
17	**2-832-007-00**	**BUSHING (K), INSULATING**
18	**3-646-090-11**	**RIVET, NYLON**
19	3-650-703-00	GUIDE, FILTER
20	3-650-711-00	RING A, GUIDE
21	3-650-730-00	SPRING
22	3-650-733-00	SLEEVE, FILTER
23	3-650-734-00	SLEEVE
24	**3-654-323-00**	**SCREW, COVER SET**
25	3-655-315-00	HOLDER, DY
26	3-655-317-00	SPRING
27	3-664-204-00	LABEL, CONTROL
28	3-664-211-00	SUPPORT (1), CR
29	3-664-212-00	SUPPORT (2), CR
30	3-664-289-00	RING, ADJUSTMENT
31	**3-664-215-00**	**RING, GROUND**
32	3-664-216-00	MOUNT, LENS
33	3-664-217-00	SPACER, KNOB
34	**X-3664-208-0**	**KNOB, FADE**
35	3-664-221-00	CUSHION, SW

No.	Parts No.	Description
36	3-664-224-00	PLATE, CONTROL
37	**X-3664-209-0**	**KNOB, GAIN**
38	3-664-227-00	ESCUTCHEON, CONTROL
39	3-664-229-00	PLATE, SWITCH
40	3-664-230-00	BLIND, SWITCH
41	3-664-231-00	BAND, RADIATION
42	3-664-232-00	BRACKET, CONNECTOR
43	3-664-234-00	PLATE, ORNAMENTAL, SWITCH
44	3-664-236-00	INSULATOR, REG
45	**3-664-238-00**	**SHEET, HEAT SINK**
46	3-664-241-00	PAD
47	3-664-249-00	SUPPORT (3), CR
48	3-664-255-00	CASE (1), SHIELD, REG
49	3-664-256-00	CASE (2), SHIELD, REG
50	3-664-257-00	PANEL, FRONT
51	3-664-258-00	CABINET
52	3-664-283-00	LABEL, CAMERA CAUTION
53	3-664-288-00	PLATE, GROUND
54	**3-703-037-00**	**INSULATOR, TO-220**
55	**3-703-081-31**	**LABEL, CAUTION**
56	**3-705-269-00**	**CAP, DUST**
57	**3-706-459-00**	**HOOD, LENS**
58	**8-701-022-29**	**SMF TRINICON WITH FOCUS COIL (CT-2222)**
	8-701-022-32	**SMF TRINICON WITH FOCUS COIL (CT-2232)**
59	3-682-762-01	PLATE, PREVENTION DUST (AEP . . . S/N 90691 AND HIGHER; UK . . . S/N 50976 AND HIGHER)

NOTE:

1. **The shaded and ⚠ -marked components are critical to safety. Replace only with same components as specified.**
2. Parts printed in Bold-Face type are normally stocked for replacement purposes. The remaining parts shown in this manual are not normally required for routine service work. Orders for parts not shown in Bold-Face type will be processed, but allow for additional delivery time.
3. Item with no part number and/or no description are not stocked because they are seldom required for routine service.

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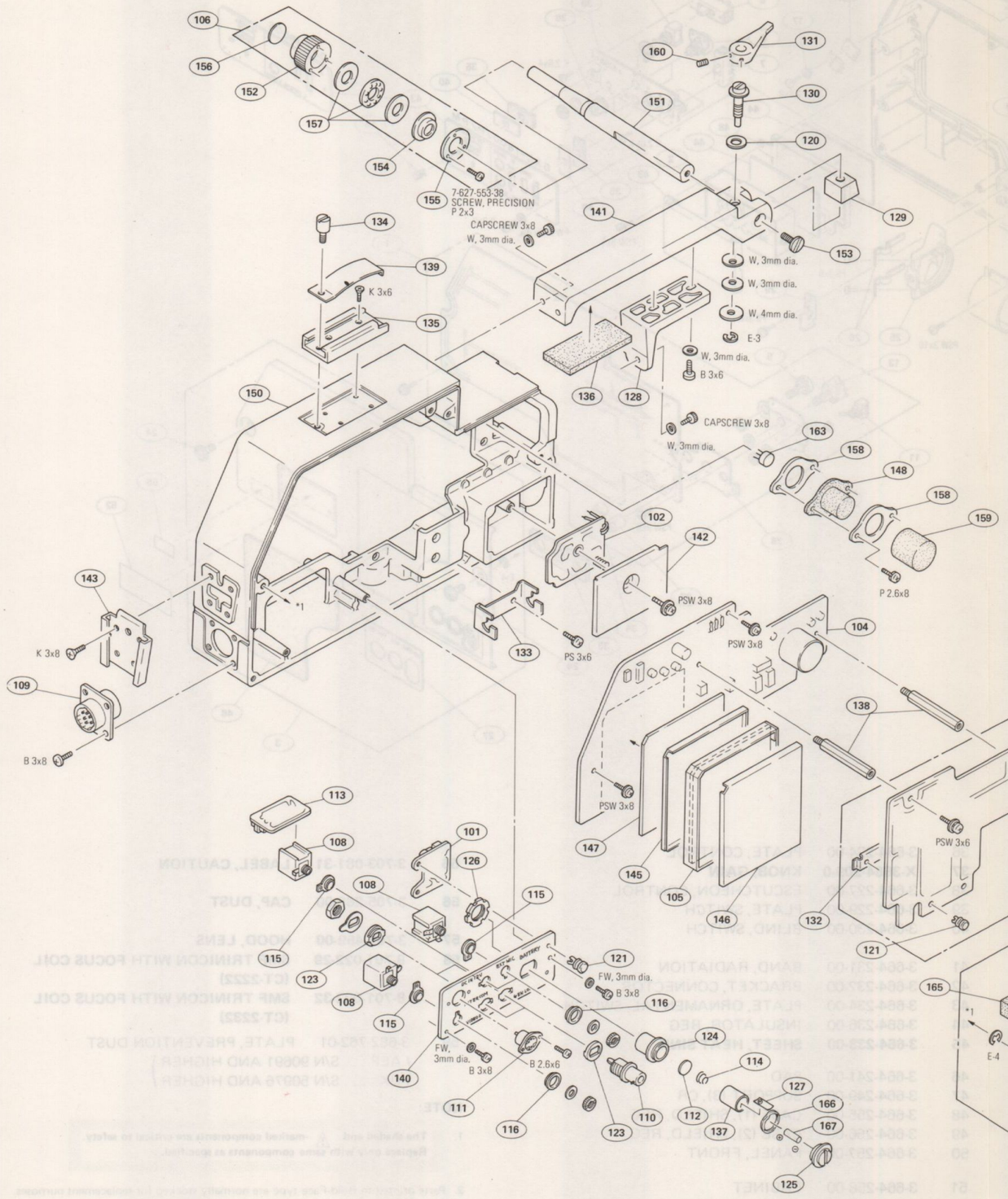

No.	Parts No.	Description
101	A-7511-509-A	MOUNTED CIRCUIT BOARD "MI-2"
102	A-7511-513-A	MOUNTED CIRCUIT BOARD "PA-12"
103	A-7511-515-A	MOUNTED CIRCUIT BOARD "PR-25"
104	A-7511-519-A	MOUNTED CIRCUIT BOARD "DF-10"
105	A-7511-520-A	MOUNTED CIRCUIT BOARD "SG-34"
106	A-7612-153-A	KNOB ASS'Y
107	X-3664-201-0	PLATE (A) ASS'Y, SIDE
108	**1-507-251-XX**	**JACK, MINI, JM35-M10**
109	**1-508-942-00**	**RECEPTACLE, 14P (CN201)**
110	**1-509-891-00**	**RECEPTACLE, BNC**
111	**1-561-562-00**	**RECEPTACLE, 4P (CN4, DC IN)**
112	1-587-569-00	PRINTED CIRCUIT BOARD "BA-2"
113	1-603-036-00	PRINTED CIRCUIT BOARD "MO-2"
114	**2-522-007-00**	**SPRING, NEGATIVE**
115	**3-437-228-00**	**INSULATOR, JACK**
116	**3-437-229-01**	**INSULATOR (B), JACK**
120	**3-645-567-01**	**SPACER, FLANGE**
121	**3-646-090-11**	**RIVET, NYLON**
122	**3-654-323-00**	**SCREW, COVER SET**
123	3-654-545-00	SPACER, BNC
124	3-657-650-00	CASE, MB
125	3-657-651-00	CAP, MB
126	3-657-666-00	NUT (M18)
127	3-657-783-00	LABEL, POSITIVE INDICATION
128	3-664-205-00	ANGLE, HANDLE
129	3-664-206-00	CHIP, TAPER
130	3-664-207-00	SHAFT, LOCK

No.	Parts No.	Description
131	3-664-208-00	LEVER
132	3-664-209-00	SUPPORT (1), PR
133	3-664-210-00	SUPPORT (2), PR
134	3-664-213-00	SCREW, STOPPER
135	3-664-218-00	SHOE
136	3-664-219-00	CUSHION, HANDLE
137	3-664-222-00	SPACER
138	3-664-223-00	SUPPORT, PC BOARD
139	3-664-228-00	PLATE, SPRING
140	3-664-233-00	PLATE, CN
141	3-664-235-00	HANDLE
142	3-664-237-00	CASE, SHIELD, PA
143	3-664-239-00	SHOE, BATTERY
144	3-664-240-00	SHEET, LATHER
145	3-664-242-00	LID, LOWER, SG SHIELD
146	3-664-243-00	LID, UPPER, SG SHIELD
147	3-664-245-00	INSULATOR
148	3-664-248-00	CUSHION, MICROPHONE
149	**X-3664-206-0**	**EMBLEM ASS'Y, TRINICON**
150	3-664-258-00	CABINET
151	3-664-264-00	SHAFT, VF
152	**3-664-265-00**	**KNOB**
153	**3-664-266-00**	**SCREW (M4), COIN**
154	3-664-267-00	SPACER
155	3-664-268-00	RETAINER, BEARING
156	3-664-269-00	PLATE, BLIND
157	**3-664-270-00**	**BEARING, THRUST BALL**
158	3-664-292-00	CUSHION, MICROPHONE
159	**3-664-280-00**	**SCREEN, MICROPHONE WIND**
160	**3-701-507-00**	**SET SCREW, 3x5**
161	**3-703-043-31**	**LABEL, CAUTION, MAIN**
162	**4-836-828-00**	**EMBLEM, SONY**
163	**8-814-200-70**	**MICROPHONE (C-1003F) (MIC 1)**
	(AEP) . . . UP TO (S/N) 14450	
	(UK) . . . UP TO (S/N) 50650	
	8-814-189-31	**MICROHONE (C-1007A)**
	(AEP) . . . (S/N) 14451 AND HIGHER	
	(UK) . . . (S/N) 50651 AND HIGHER	
165	3-664-281-00	CUSHION, SG
166	**3-664-576-00**	**WASHER, WAVE**
167	**1-528-086-00**	**BATTERY, MERCURY (M542)**

NOTE:

1. **The shaded and ⚠ -marked components are critical to safety. Replace only with same components as specified.**
2. Parts printed in Bold-Face type are normally stocked for replacement purposes. The remaining parts shown in this manual are not normally required for routine service work. Orders for parts not shown in Bold-Face type will be processed, but allow for additional delivery time.
3. Item with no part number and/or no description are not stocked because they are seldom required for routine service.

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5-2. ELECTRICAL PARTS LIST

CAPACITOR

Parts that are not listed in the "reference numbers order list" are shown in following table.
Reference numbers are omitted.

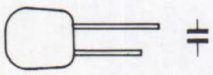
CERAMIC CAPACITOR 0.001μF through 0.1μF 50WV

Parts NO. 1-161-□□□-00

Value	Parts No. -□□□-	Substitute
0.001 μF	039	(1-102-074-00)
0.0012	040	
0.0015	041	
0.0018	042	
0.0022	043	(1-102-100-00)
0.0027	044	
0.0033	045	
0.0039	046	(1-102-124-00)
0.0047	047	
0.0056	048	
0.0068	049	
0.0082	050	

Value	Parts No. -□□□-	Substitute
0.01 μF	051	(1-101-118-00)
0.012	052	
0.015	053	
0.018	054	
0.022	055	(1-101-005-00)
0.027	056	
0.033	057	
0.039	058	
0.047	059	(1-101-006-00)
0.056	060	
0.068	061	
0.082	062	
0.1	063	

SILVERED MICA CAPACITOR 1 pF through 620 pF ±5%, 50WV



Parts No. 1-107-□□□-00

Value	Parts No. -□□□-
1 pF	098
2	099
3	100
4	101
5	102
6	103
7	104
8	105
9	106
10	061
11	062
12	063
13	064

Value	Parts No. -□□□-
15 pF	065
16	066
18	067
20	068
22	069
24	070
27	071
30	072
33	073
36	074
39	075
43	076
47	077

Value	Parts No. -□□□-
51 pF	078
56	079
62	080
68	081
75	082
82	083
91	084
100	085
110	086
120	087
130	088
150	089
160	090

Value	Parts No. -□□□-
180 pF	091
200	092
220	093
240	094
270	095
300	096
330	097
360	231
390	232
430	233
470	234
510	235
560	236
620	237

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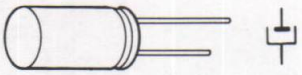
ELECTROLYTIC CAPACITOR 0.47μF through 470μF
6.3WV through 50 (63, 100)WV



Parts No. 1-123-□□□-00

Value		Parts No. −□□□−
0.47μF	50V	
	100	379
1	50	
	100	380
2.2	50	
	100	381
3.3	25	
	35	
	50	
	100	382
4.7	25	
	35	
	50	
	63	369
10	10	
	16	
	25	
	35	
	50	356
22	16	
	25	330

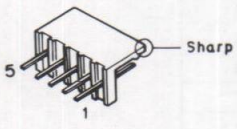
Value		Parts No. −□□□−
22μF	35V	342
	50	
	63	371
33	6.3	
	10	
	16	318
	25	
	35	343
	50	
	63	372
47	6.3	
	10	306
	16	
	25	332
	35	
	50	359
100	6.3	
	10	307
	16	
	25	333
	35	345

Value		Parts No. −□□□−
100μF	50V	360
220	6.3	
	10	308
	16	321
	25	334
	35	346
	50	361
330	6.3	
	10	309
	16	322
	25	335
	35	347
	50	362
470	6.3	298
	10	310
	16	323
	25	336
	35	348
	50	
	63	377

CONNECTOR

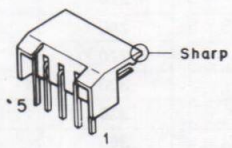
Parts that are not listed in the "reference numbers order list" are shown in following table.
Reference numbers are omitted.

top-type receptacle



2P	1-560-356-00
3P	1-560-357-00
4P	1-560-358-00
5P	1-560-359-00
6P	1-560-360-00
8P	1-560-361-00
10P	1-560-362-00
12P	1-560-363-00

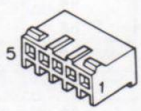
side-type receptacle



2P	1-560-364-00
3P	1-560-365-00
4P	1-560-366-00
5P	1-560-367-00
6P	1-560-368-00
8P	1-560-369-00
10P	1-560-370-00
12P	1-560-371-00

plug

housing



2P	1-561-514-00
3P	1-561-515-00
4P	1-561-516-00
5P	1-561-517-00
6P	1-561-518-00
8P	1-561-519-00
10P	1-561-520-00
12P	1-561-521-00

contact

1-560-372-00

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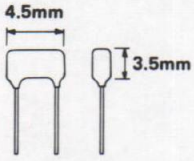
RESISTOR

Parts that are not listed in the "reference numbers order list" are shown in following table.
Reference numbers are omitted.

METAL FILM RESISTOR



± 1%, 1/8W
10Ω through 33kΩ

Parts No. 1-214-□□□-00

Value	Parts No. -□□□-
10Ω	509
11	510
12	511
13	512
15	513
16	514
18	515
20	516
22	517
24	518
27	519
30	520
33	521
36	522
39	523
43	524
47	525
51	526
56	527
62	528
68	529
75	530
82	531
91	532

Value	Parts No. -□□□-
100Ω	533
110	534
120	535
130	536
150	537
160	538
180	539
200	540
220	541
240	542
270	543
300	544
330	545
360	546
390	547
430	548
470	549
510	550
560	551
620	552
680	553
750	554
820	555
910	556

Value	Parts No. -□□□-
1.0kΩ	557
1.1	558
1.2	559
1.3	560
1.5	561
1.6	562
1.8	563
2.0	564
2.2	565
2.4	566
2.7	567
3.0	568
3.3	569
3.6	570
3.9	571
4.3	572
4.7	573
5.1	574
5.6	575
6.2	576
6.8	577
7.5	578
8.2	579
9.1	580

Value	Parts No. -□□□-
10kΩ	581
11	582
12	583
13	584
15	585
16	586
18	587
20	588
22	589
24	590
27	591
30	592
33	593

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RESISTOR

Parts that are not listed in the "reference numbers order list" are shown in following table.
Reference numbers are omitted.

CARBON RESISTOR (1/8W) ±5%, 1/8W, non-special type
2.2Ω through 1MΩ

Parts No. 1-246-□□□-00

Value	Parts No. −□□□−
1Ω	–
1.1	–
1.2	–
1.3	–
1.5	–
1.6	–
1.8	–
2	–
2.2	751
2.4	812
2.7	752
3	813
3.3	753
3.6	814
3.9	754
4.3	815
4.7	755
5.1	816
5.6	756
6.2	817
6.8	757
7.5	818
8.2	758
9.1	819
10Ω	759
11	820
12	760
13	821
15	761
16	822
18	762
20	823
22	763
24	824
27	764
30	825

Value	Parts No. −□□□−
33Ω	765
36	826
39	766
43	827
47	767
51	828
56	768
62	829
68	769
75	830
82	770
91	831
100Ω	771
110	832
120	772
130	833
150	773
160	834
180	774
200	835
220	775
240	836
270	776
300	837
330	777
360	838
390	778
430	839
470	779
510	840
560	780
620	841
680	781
750	842
820	782
910	843

Value	Parts No. −□□□−
1kΩ	783
1.1	844
1.2	784
1.3	845
1.5	785
1.6	846
1.8	786
2	847
2.2	787
2.4	848
2.7	788
3.0	849
3.3	789
3.6	850
3.9	790
4.3	851
4.7	791
5.1	852
5.6	792
6.2	853
6.8	793
7.5	854
8.2	794
9.1	855
10kΩ	795
11	856
12	796
13	857
15	797
16	858
18	798
20	859
22	799
24	860
27	800
30	861

Value	Parts No. −□□□−
33kΩ	801
36	862
39	802
43	863
47	803
51	864
56	804
62	865
68	805
75	866
82	806
91	867
100kΩ	807
110	868
120	808
130	869
150	809
160	870
180	810
200	871
220	811

Parts No. 1-247-□□□-00

Value	Parts No. −□□□−
240kΩ	054
270	046
300	055
330	047
360	056
390	048
430	057
470	049
510	058
560	050
620	059
680	051
750	060
820	052
910	061
1MΩ	053

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Ref. No.	Parts No.	Description
CR-11 BOARD		
	A-7511-512-A	MOUNTED CIRCUIT BOARD "CR-11" (DXC-1800P)
	A-7511-650-A	MOUNTED CIRCUIT BOARD "CR-11" (DXC-1800PM)
C1	**1-131-371-00**	**TANTALUM 10 10% 16V**
C15	**1-131-371-00**	**TANTALUM 10 10% 16V**
C18	**1-131-381-00**	**TANTALUM 47 10% 10V**
C19	**1-131-377-00**	**TANTALUM 10 10% 10V**
C20	**1-131-347-00**	**TANTALUM 1 10% 35V**
C26	**1-107-206-00**	**MICA 15PF 5% 500V**
C27	**1-107-158-00**	**MICA 30PF 5% 500V**
C28	**1-107-206-00**	**MICA 15PF 5% 500V**
C34	**1-107-049-00**	**MICA 8.2PF 10% 500V**
C35	**1-107-207-00**	**MICA 16PF 5% 500V**
C36	**1-107-049-00**	**MICA 8.2PF 10% 500V**
C37	**1-131-347-00**	**TANTALUM 1 10% 35V**
C44	**1-131-371-00**	**TANTALUM 10 10% 16V**
C50	**1-107-158-00**	**MICA 30PF 5% 500V**
C52	**1-107-158-00**	**MICA 30PF 5% 500V**
C57	**1-131-371-00**	**TANTALUM 10 10% 16V**
C60	**1-131-377-00**	**TANTALUM 10 10% 10V**
C61	**1-102-112-00**	**CERAMIC 330PF 50V**
C63	**1-102-110-00**	**CERAMIC 220PF 50V**
C67	**1-108-249-00**	**MYLAR 0.068 10% 50V**
C69	**1-131-379-00**	**TANTALUM 22 10% 10V**
C70	**1-131-377-00**	**TANTALUM 10 10% 10V**
C73	**1-131-379-00**	**TANTALUM 22 10% 10V**
C74	**1-108-249-00**	**MYLAR 0.068 10% 50V**
C80	**1-107-049-00**	**MICA 8.2PF 10% 500V**
C81	**1-108-246-00**	**MYLAR 0.047 10% 50V**
C83	**1-131-371-00**	**TANTALUM 10 10% 16V**
C86	**1-109-716-00**	**MICA 100PF 5% 300V (DXC-1800P)**
C86	**1-109-717-00**	**MICA 100PF 5% 300V (DXC-1800PM)**
C87	**1-109-716-00**	**MICA 100PF 5% 300V (DXC-1800P)**
C87	**1-109-717-00**	**MICA 100PF 5% 300V (DXC-1800PM)**
C89	**1-109-716-00**	**MICA 100PF 5% 300V**
C90	**1-109-716-00**	**MICA 100PF 5% 300V**
C92	**1-109-716-00**	**MICA 100PF 5% 300V**
C95	**1-131-371-00**	**TANTALUM 10 10% 16V**
C98	**1-107-049-00**	**MICA 8.2PF 10% 500V**
C109	**1-131-377-00**	**TANTALUM 10 10% 10V**
C113	**1-123-299-00**	**ELECT 1000 6.3V**
C114	**1-123-311-00**	**ELECT 1000 10V**
C122	**1-108-246-00**	**MYLAR 0.047 10% 50V**
C124	**1-131-371-00**	**TANTALUM 10 10% 16V**
C125	**1-131-377-00**	**TANTALUM 10 10% 10V**

Ref. No.	Parts No.	Description
C127	**1-131-377-00**	**TANTALUM 10 10% 10V**
C131	**1-108-240-00**	**MYLAR 0.015 10% 50V**
C134	**1-131-361-00**	**TANTALUM 2.2 10% 20V**
C138	**1-108-249-00**	**MYLAR 0.068 10% 50V**
C142	**1-131-371-00**	**TANTALUM 10 10% 16V**
C144	**1-108-239-00**	**MYLAR 0.01 10% 50V**
C145	**1-131-347-00**	**TANTALUM 1 10% 35V**
C146	**1-131-347-00**	**TANTALUM 1 10% 35V**
C148	**1-131-341-00**	**TANTALUM 0.1 10% 35V**
C149	**1-131-341-00**	**TANTALUM 0.1 10% 35V**
C150	**1-131-341-00**	**TANTALUM 0.1 10% 35V**
C151	**1-131-341-00**	**TANTALUM 0.1 10% 35V**
C152	**1-131-341-00**	**TANTALUM 0.1 10% 35V**
C153	**1-131-341-00**	**TANTALUM 0.1 10% 35V**
C154	**1-131-341-00**	**TANTALUM 0.1 10% 35V**
C155	**1-108-246-00**	**MYLAR 0.047 10% 50V**
C156	**1-108-246-00**	**MYLAR 0.047 10% 50V**
C158	**1-131-377-00**	**TANTALUM 10 10% 10V**
C160	**1-131-341-00**	**TANTALUM 0.1 10% 35V**
C162	**1-131-371-00**	**TANTALUM 10 10% 16V**
C164	**1-131-371-00**	**TANTALUM 10 10% 16V**
C167	**1-102-107-00**	**CERAMIC 120PF 50V**
C168	**1-131-371-00**	**TANTALUM 10 10% 16V**
C172	**1-131-371-00**	**TANTALUM 10 10% 16V**
C173	**1-131-371-00**	**TANTALUM 10 10% 16V**
C176	**1-131-362-00**	**TANTALUM 3.3 10% 20V**
C177	**1-131-347-00**	**TANTALUM 1 10% 35V**
C178	**1-102-114-00**	**CERAMIC 470PF 50V**
C179	**1-102-107-00**	**CERAMIC 120PF 50V**
C182	**1-131-371-00**	**TANTALUM 10 10% 16V**
C187	**1-102-106-00**	**CERAMIC 100PF 50V**
C188	**1-131-369-00**	**TANTALUM 4.7 10% 16V**
C304	**1-131-347-00**	**TANTALUM 1 10% 35V**
C305	**1-130-489-00**	**MYLAR 0.033 50V**
D1	**8-719-815-55**	**1S1555**
D2	**8-719-815-55**	**1S1555**
D3	**8-719-815-55**	**1S1555**
D4	**8-719-815-55**	**1S1555**
D5	**8-719-815-55**	**1S1555**
D6	**8-719-815-55**	**1S1555**
D7	**8-719-815-55**	**1S1555**
D8	**8-719-815-55**	**1S1555**
D9	**8-719-815-55**	**1S1555**
D10	**8-719-815-55**	**1S1555**

NOTE:

Parts printed in **Bold-Face type** are normally stocked for replacement purposes. The remaining parts shown in this manual are not normally required for routine service work. Orders for parts not shown in Bold-Face type will be processed, but allow for additional delivery time.

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Ref. No.	Parts No.	Description
D11	8-719-815-55	1S1555
D12	8-719-122-11	1S2210
D13	8-719-815-55	1S1555
D14	8-719-305-15	GH3F
D15	8-719-815-55	1S1555
D16	8-719-815-55	1S1555
D17	8-719-815-55	1S1555
D18	8-719-815-55	1S1555
D19	8-719-815-55	1S1555
D20	8-719-815-55	1S1555
D21	8-719-815-55	1S1555
DA1	1-231-387-00	RESISTOR, BLOCK
DL1	1-415-134-00	1H (DXC-1800P)
DL1	1-415-163-00	1H (DXC-1800PM)
DL2	1-415-134-00	1H (DXC-1800P)
DL2	1-415-163-00	1H (DXC-1800PM)
IC1	8-758-160-00	CX816; SONY
IC2	8-759-608-11	CX811; SONY
IC3	8-749-930-60	BX306; SONY
IC4	8-743-780-00	BX378; SONY
IC5	8-759-240-11	TC4011BP (CD4011BE; RCA)
IC6	8-759-240-29	TC4029BP (CD4029BE; RCA)
IC7	8-759-240-73	TC4073BP (CD4073BE; RCA)
IC8	8-749-930-60	BX306; SONY
IC9	8-759-240-53	TC4053BP (CD4053BE; RCA)
IC10	8-759-608-73	CX873; SONY
IC11	8-758-140-00	CX814; SONY
IC12	8-758-140-00	CX814; SONY
IC13	8-743-331-00	BX333A; SONY
IC14	8-759-133-90	μPC339C; NEC
IC15	8-759-240-53	TC4053BP (CD4053BE; RCA)
IC16	8-759-240-11	TC4011BP (CD4011BE; RCA)
IC17	8-759-131-10	μPC311C; NEC
IC18	8-759-350-28	HD44750A28; HITACHI
IC19	8-759-990-72	TL072CP; TI
IC20	8-759-240-51	TC4051BP (CD4051BE; RCA)
IC21	8-759-605-18	CX518; SONY
IC22	8-759-900-64	TL064CN; TI
IC23	8-759-900-64	TL064CN; TI
IC24	8-759-240-51	TC4051BP (CD4051BE; RCA)
IC25	8-759-906-07	TL607CP; TI
IC26	8-759-900-64	TL064CN; TI
IC27	8-759-906-07	TL607CP; TI
IC28	8-759-133-90	μPC339C; NEC
IC29	8-759-990-82	TL082CP; TI
IC301	8-759-990-82	TL082CP; TI

Ref. No.	Parts No.	Descriptoin
L1	1-407-161-XX	MICRO 22
L4	1-407-921-00	MICRO 8.2
L5	1-407-921-00	MICRO 8.2
L10	1-407-163-XX	MICRO 33
L11	1-407-174-XX	MICRO 270
L12	1-407-164-XX	MICRO 39
L13	1-407-176-XX	MICRO 390
L14	1-407-176-XX	MICRO 390
L15	1-407-164-XX	MICRO 39
L16	1-408-356-00	MICRO 120
L17	1-408-356-00	MICRO 120
L18	1-408-356-00	MICRO 120
L19	1-408-356-00	MICRO 120
L21	1-407-164-XX	MICRO 39
L22	1-408-022-00	MICRO 27 (DXC-1800P)
L22	1-407-933-00	MICRO 39 (DXC-1800PM)
L23	1-408-022-00	MICRO 27 (DXC-1800P)
L23	1-407-933-00	MICRO 39 (DXC-1800PM)
L24	1-408-022-00	MICRO 27 (DXC-1800P)
L24	1-407-933-00	MICRO 39 (DXC-1800PM)
L25	1-407-164-XX	MICRO 39
L26	1-407-173-XX	MICRO 220
L27	1-407-173-XX	MICRO 220
LV1	1-407-927-00	10
LV2	1-407-927-00	10
LV3	1-407-572-00	33
LV4	1-407-572-00	33
LV5	1-407-574-00	68
LV6	1-407-574-00	68
Q1	8-723-305-00	2SK43-5
Q2	8-729-663-47	2SC1364
Q3	8-729-384-48	2SA844
Q4	8-729-663-47	2SC1364
Q5	8-729-384-48	2SA844
Q6	8-724-375-01	2SC403C
Q7	8-729-384-48	2SA844
Q8	8-724-375-01	2SC403C
Q9	8-724-375-01	2SC403C
Q10	8-729-663-47	2SC1364
Q11	8-729-663-47	2SC1364
Q12	8-729-663-47	2SC1364
Q13	8-729-663-47	2SC1364
Q14	8-729-663-47	2SC1364
Q15	8-729-663-47	2SC1364

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Ref. No.	Parts No.	Description
Q16	8-729-663-47	2SC1364
Q17	8-724-375-01	2SC403C
Q18	8-724-375-01	2SC403C
Q19	8-729-663-47	2SC1364
Q20	8-724-375-01	2SC403C
Q21	8-724-375-01	2SC403C
Q22	8-729-663-47	2SC1364
Q23	8-729-384-48	2SA844
Q24	8-729-663-47	2SC1364
Q25	8-729-384-48	2SA844
Q26	8-729-663-47	2SC1364
Q27	8-729-384-48	2SA844
Q28	8-729-663-47	2SC1364
Q29	8-729-384-48	2SA844
Q30	8-729-384-48	2SA844
Q31	8-729-384-48	2SA844
Q32	8-729-663-47	2SC1364
Q33	8-729-663-47	2SC1364
Q34	8-729-384-48	2SA844
Q35	8-729-384-48	2SA844
Q36	8-729-663-47	2SC1364
Q37	8-724-375-01	2SC403C
Q38	8-729-663-47	2SC1364
Q39	8-724-375-01	2SC403C
Q40	8-724-375-01	2SC403C
Q41	8-729-384-48	2SA844
Q42	8-729-663-47	2SC1364
Q43	8-724-375-01	2SC403C
Q44	8-729-663-47	2SC1364
Q45	8-729-384-48	2SA844
Q46	8-729-663-47	2SC1364
Q47	8-724-375-01	2SC403C
Q48	8-724-375-01	2SC403C
Q49	8-724-375-01	2SC403C
Q50	8-724-375-01	2SC403C
Q51	8-724-375-01	2SC403C
Q52	8-729-384-48	2SA844
Q53	8-724-375-01	2SC403C
Q54	8-729-384-48	2SA844
Q55	8-724-375-01	2SC403C
Q56	8-760-415-10	2SC1475-15
Q57	8-724-375-01	2SC403C
Q58	8-724-375-01	2SC403C
Q59	8-723-305-00	2SK43-5
Q60	8-724-375-01	2SC403C
Q61	8-724-375-01	2SC403C
Q62	8-765-450-20	2SK125-2
Q63	8-724-375-01	2SC403C
Q64	8-729-104-45	2SJ44

Ref. No.	Parts No.	Description
R1	1-247-831-00	CARBON 1K 5% 1/6W
R33	1-247-831-00	CARBON 1K 5% 1/6W
R34	1-247-031-00	CARBON 1K 5% 1/6W
R59	1-247-831-00	CARBON 1K 5% 1/6W
R71	1-211-905-00	METAL 3K 1% 1/4W
R72	1-211-906-00	METAL 5.9K 1% 1/4W
R73	1-211-907-00	METAL 16.2K 1% 1/4W
R74	1-247-831-00	CARBON 1K 5% 1/6W
R77	1-247-831-00	CARBON 1K 5% 1/6W
R89	1-247-831-00	CARBON 1K 5% 1/6W
R124	1-214-171-00	METAL 43K 1% 1/4W
R125	1-214-105-00	METAL 75 1% 1/4W
R129	1-247-831-00	CARBON 1K 5% 1/6W
R141	1-246-446-00	CARBON 75 5% 1/4W
R150	1-214-105-00	METAL 75 1% 1/4W
R158	1-247-831-00	CARBON 1K 5% 1/6W
R160	1-247-831-00	CARBON 1K 5% 1/6W
R171	1-247-831-00	CARBON 1K 5% 1/6W
R178	1-246-459-00	CARBON 270 5% 1/4W
R179	1-247-831-00	CARBON 1K 5% 1/6W
R185	1-246-441-00	CARBON 47 5% 1/4W
R187	1-246-457-00	CARBON 220 5% 1/4W
R192	1-246-449-00	CARBON 100 5% 1/4W
R216	1-214-171-00	METAL 43K 1% 1/4W
R218	1-247-831-00	CARBON 1K 5% 1/6W
R228	1-247-831-00	CARBON 1K 5% 1/6W
R265	1-247-831-00	CARBON 1K 5% 1/6W
RV1	1-226-702-00	METAL 2.2K
RV2	1-226-753-00	SOLID 47K
RV3	1-226-753-00	SOLID 47K
RV4	1-226-702-00	METAL 2.2K
RV5	1-226-711-00	SOLID 22K
RV6	1-226-711-00	SOLID 22K
RV7	1-226-703-00	METAL 10K
RV8	1-226-709-00	SOLID 4.7K
RV9	1-226-709-00	SOLID 4.7K
RV10	1-226-703-00	METAL 10K
RV11	1-226-702-00	METAL 2.2K
RV12	1-226-702-00	METAL 2.2K
RV13	1-226-702-00	METAL 2.2K
RV14	1-226-711-00	SOLID 22K
RV15	1-226-771-00	METAL 1K
RV16	1-226-771-00	METAL 1K
RV17	1-226-772-00	METAL 4.7K
RV18	1-226-771-00	METAL 1K
RV19	1-226-771-00	METAL 1K
RV20	1-226-770-00	METAL 470

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Ref. No.	Parts No.	Description
RV21	**1-226-702-00**	**METAL 2.2K**
RV22	**1-226-771-00**	**METAL 1K**
RV23	**1-226-702-00**	**METAL 2.2K**
RV24	**1-226-770-00**	**METAL 470**
RV25	**1-226-772-00**	**METAL 4.7K**
RV26	**1-226-916-00**	**CARBON 10K (B) "FADE TIME"**
RV27	**1-226-772-00**	**METAL 4.7K**
RV28	**1-226-703-00**	**METAL 10K**
RV29	**1-224-940-00**	**METAL 10K**
RV301	**1-226-753-00**	**VAR, SOLID 47kΩ**
RV302	**1-226-753-00**	**VAR, SOLID 47kΩ**
S1	**1-553-430-00**	**TOGGLE "WHITE BAL"**
S2	**1-553-432-00**	**ROTARY "GAIN"**
TH1	**1-800-069-XX**	**S-1.5K**
THP2	**1-800-642-00**	**S-2K**
THP3	**1-800-642-00**	**S-2K**
TM1	ATTACH TO THE TRINICON CT-2222	
X1	**1-527-730-00**	**CERAMIC 400kHz**

DF-10 BOARD

	A-7511-519-A	MOUNTED CIRCUIT BOARD "DF-10" (DXC-1800P)
	A-7511-651-A	MOUNTED CIRCUIT BOARD "DF-10" (DXC-1800PM)
C6	**1-131-377-00**	**TANTALUM 10 10% 10V**
C8	**1-131-343-00**	**TANTALUM 0.22 10% 35V**
C10	**1-108-239-00**	**MYLAR 0.01 10% 50V**
C11	**1-131-381-00**	**TANTALUM 47 10% 10V**
C17	**1-102-117-00**	**CERAMIC 820PF 50V**
C18	**1-131-347-00**	**TANTALUM 1 10% 35V**
C20	**1-131-347-00**	**TANTALUM 1 10% 35V**
C26	**1-108-427-00**	**MYALR 0.033 10% 200V**
C28	**1-130-106-00**	**POLYESTER 0.1 10% 600V**
C29	**1-130-808-00**	**MYLAR 0.22 5% 400V**
C30	**1-130-101-00**	**POLYESTER 0.22 10% 250V**
C33	**1-130-806-00**	**MYLAR 0.1 5% 400V**
C34	**1-108-239-00**	**MYLAR 0.01 10% 50V**
C35	**1-107-168-00**	**MICA 91PF 5% 500V**
C36	**1-107-168-00**	**MICA 91PF 5% 500V**
C37	**1-102-440-00**	**CERAMIC 220PF 2kV**
C38	**1-102-440-00**	**CERAMIC 220PF 2kV**
C39	**1-106-212-00**	**MYLAR 0.047 5% 100V**
C40	**1-106-212-00**	**MYLAR 0.047 5% 100V**
C41	**1-102-440-00**	**CERAMIC 220PF 2kV**
C42	**1-108-239-00**	**MYLAR 0.01 10% 50V**
C44	**1-108-239-00**	**MYLAR 0.01 10% 50V**
C46	**1-131-380-00**	**TANTALUM 33 10% 10V**
C48	**1-131-380-00**	**TANTALUM 33 10% 10V**
C55	**1-123-615-00**	**ELECT 4.7 35V**
C56	**1-123-617-00**	**ELECT 10 16V**
C57	**1-107-159-00**	**MICA 33PF 5% 500V**
C58	**1-107-159-00**	**MICA 33PF 5% 500V**
C59	**1-123-615-00**	**ELECT 4.7 35V**
C60	**1-123-617-00**	**ELECT 10 16V**
C61	**1-108-246-00**	**MYLAR 0.047 10% 50V**
C66	**1-131-376-00**	**TANTALUM 6.8 10% 10V**
C68	**1-131-371-00**	**TANTALUM 10 10% 16V**
C69	**1-131-371-00**	**TANTALUM 10 10% 16V**
C70	**1-131-348-00**	**TANTALUM 1.5 10% 35V**
C73	**1-131-347-00**	**TANTALUM 1 10% 35V**
C74	**1-131-371-00**	**TANTALUM 10 10% 16V**
C78	**1-107-159-00**	**MICA 33PF 5% 500V**
C79	**1-108-381-00**	**MYLAR 0.022 10% 100V**
C80	**1-108-381-00**	**MYLAR 0.022 10% 100V**
C81	**1-131-371-00**	**TANTALUM 10 10% 16V**
C82	**1-131-373-00**	**TANTALUM 22 10% 16V**
C83	**1-102-107-00**	**CERAMIC 120PF 50V**
CN10	**1-561-375-11**	**1P**
D1	**8-719-815-55**	**1S1555**
D2	**8-719-815-55**	**1S1555**
D3	**8-719-815-55**	**1S1555**
D4	**8-719-982-04**	**ERB81-004**
D5	**8-719-982-04**	**ERB81-004**
D6	**8-719-982-04**	**ERB81-004**
D7	**8-719-305-15**	**GH3F**
D8	**8-719-305-15**	**GH3F**
D9	**8-719-305-15**	**GH3F**
D10	**8-719-305-15**	**GH3F**

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Ref. No.	Parts No.	Description
D11	8-719-305-15	GH3F
D14	8-719-815-55	1S1555
D15	8-719-815-55	1S1555
D16	8-719-815-55	1S1555
D17	8-719-815-55	1S1555
D18	8-719-815-55	1S1555
D19	8-719-815-55	1S1555
D20	8-719-815-55	1S1555
D21	8-719-815-55	1S1555
D22	8-719-815-55	1S1555
D23	8-719-815-55	1S1555
D24	8-719-815-55	1S1555
D25	8-719-815-55	1S1555
D26	8-719-815-55	1S1555
D27	8-719-815-55	1S1555
D28	8-719-982-04	ERB81-004
D29	8-719-982-04	ERB81-004
IC1	8-759-902-21	SN74LS221N; TI
IC2	8-743-690-00	BX369; SONY
IC3	8-743-690-00	BX369; SONY
IC4	8-759-902-21	SN74LS221N; TI
IC5	8-759-145-58	μPC4558C; NEC
IC6	8-759-990-82	TL082CP; TI
IC7	8-759-990-82	TL082CP; TI
IC8	8-759-240-53	TC4053BP (CD4053BE; RCA)
IC9	8-759-145-58	μPC4558C; NEC
L1	1-421-013-00	CHOKE 25
L2	1-407-176-XX	MICRO 390
L3	1-407-164-XX	MICRO 39
L4	1-407-164-XX	MICRO 39
Q1	8-729-384-48	2SA844
Q4	8-729-671-15	2SC710-15
Q5	8-729-384-48	2SA844
Q6	8-729-671-15	2SC710-15
Q7	8-729-671-15	2SC710-15
Q9	8-729-671-15	2SC710-15
Q10	8-729-384-48	2SA844
Q11	8-729-671-15	2SC710-15
Q12	8-729-671-15	2SC710-15
Q13	8-729-384-48	2SA844
Q14	8-727-587-28	2SC756-872
Q15	8-727-587-28	2SC756-872
Q16	8-729-468-43	2SA684
Q17	8-760-413-10	2SC1475
Q18	8-729-663-47	2SC1364
Q19	8-760-413-10	2SC1475
Q20	8-729-663-47	2SC1364
Q21	8-729-384-48	2SA844
Q22	8-729-663-47	2SC1364
Q23	8-729-384-48	2SA844

Ref. No.	Parts No.	Description
Q24	8-723-305-00	2SK43-5
Q25	8-729-663-47	2SC1364
Q26	8-729-663-47	2SC1364
Q27	8-729-663-47	2SC1364
Q28	8-724-375-01	2SC403C
Q29	8-729-663-47	2SC1364
Q30	8-761-622-00	2SC1636
Q31	8-729-384-48	2SA844
Q32	8-729-663-47	2SC1364
Q33	8-729-663-47	2SC1364
Q34	8-729-384-48	2SA844
Q35	8-729-384-48	2SA844
Q36	8-729-384-48	2SA844
Q37	8-729-384-48	2SA844
Q38	8-729-663-47	2SC1364
Q39	8-729-384-48	2SA844
R39	1-246-441-00	CARBON 47 5% 1/4W
R40	1-246-441-00	CARBON 47 5% 1/4W
R46	1-210-821-00	CARBON 2.2M 5% 1/4W
R55	1-214-962-00	METAL 820K 1% 1/4W
R56	1-214-779-00	METAL 120K 1% 1/4W
R61	1-214-962-00	METAL 820K 1% 1/4W (DXC-1800P)
R61	1-214-961-00	METAL 750K 1% 1/4W (DXC-1800PM)
R62	1-214-775-00	METAL 82K 1% 1/4W
RV1	1-226-774-00	METAL 47K
RV2	1-226-704-00	METAL 470K
RV3	1-226-776-00	METAL 220K
RV4	1-226-703-00	METAL 10K
RV5	1-226-704-00	METAL 470K
RV6	1-226-774-00	METAL 47K
RV7	1-226-703-00	METAL 10K
RV8	1-226-702-00	METAL 2.2K
RV9	1-226-702-00	METAL 2.2K
RV10	1-226-771-00	METAL 1K
RV11	1-226-774-00	METAL 47K
RV13	1-226-773-00	METAL 22K
RV14	1-226-703-00	METAL 10K
RV15	1-226-703-00	METAL 10K
RV16	1-226-769-00	METAL 100
T1	1-433-219-00	COUPLING
T2	1-443-219-00	COUPLING
T3	1-446-812-00	DC-DC CONVERTER

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Ref. No.	Parts No.	Description
MI-2 BOARD		
	A-7511-509-A	MOUNTED CIRCUIT BOARD "MI-2"
C1	**1-108-246-00**	**MYLAR 0.047 10% 50V**
Q1	**8-729-309-06**	**2SC1890A**
T1	**1-427-487-00**	**OUTPUT**
MO-2 BOARD		
	1-603-036-00	PRINTED CIRCUIT BOARD "MO-2"
CN1	**1-507-251-XX**	**JACK, MINI JM-35 M-10 "EARPHONE"**
T1	**1-427-270-XX**	**OUTPUT**
PA-12 BOARD		
	A-7511-513-A	MOUNTED CIRCUIT BOARD "PA-12"
C1	**1-108-383-00**	**MYLAR 0.033 10% 100V**
C2	**1-108-377-00**	**MYLAR 0.01 10% 100V**
C3	**1-108-383-00**	**MYLAR 0.033 10% 100V**
C4	**1-131-371-00**	**TANTALUM 10 10% 16V**
C6	**1-102-116-00**	**CERAMIC 680PF 50V**
C7	**1-131-371-00**	**TANTALUM 10 10% 16V**
C8	**1-107-019-00**	**MICA 1PF ± 0.5PF 500V**
C9	**1-131-374-00**	**TANTALUM 33 10% 16V**
C10	**1-131-374-00**	**TANTALUM 33 10% 16V**
CT1	**1-141-084-XX**	**5 ~ 55PF**
L1	**1-407-779-00**	**VAR 120**
L2	**1-407-177-XX**	**MICRO 470**
L3	**1-407-177-XX**	**MICRO 470**
Q1	**8-765-423-00**	**2SK152-3**
Q2	**8-729-671-15**	**2SC710-15**
Q3	**8-729-384-48**	**2SA844**
Q4	**8-729-671-15**	**2SC710-15**
R1	**1-210-821-00**	**CARBON 2.2M 5% 1/4W**
R4	**1-210-821-00**	**CARBON 2.2M 5% 1/4W**
T1	**1-437-077-00**	**DRIVE**
PR-25 BOARD		
	A-7511-515-A	MOUNTED CIRCUIT BOARD "PR-25"
C5	**1-131-341-00**	**TANTALUM 0.1 10% 35V**
C7	**1-107-206-00**	**MICA 15PF 5% 500V**
C8	**1-131-344-00**	**TANTALUM 0.33 10% 35V**
C20	**1-131-343-00**	**TANTALUM 0.22 10% 35V**
C24	**1-131-343-00**	**TANTALUM 0.22 10% 35V**
C25	**1-131-343-00**	**TANTALUM 0.22 10% 35V**
C27	**1-108-239-00**	**MYLAR 0.01 10% 50V**
C33	**1-131-343-00**	**TANTALUM 0.22 10% 35V**
C34	**1-131-341-00**	**TANTALUM 0.1 10% 35V**
C36	**1-131-345-00**	**TANTALUM 0.47 10% 35V**

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Ref. No.	Parts No.	Description
C37	1-131-379-00	TANTALUM 22 10% 10V
C40	1-108-239-00	MYLAR 0.01 10% 50V
C42	1-123-617-00	ELECT 10 16V
C43	1-131-343-00	TANTALUM 0.22 10% 35V
C44	1-131-343-00	TANTALUM 0.22 10% 35V
C46	1-107-209-00	MICA 20PF 5% 500V
C47	1-107-209-00	MICA 20PF 5% 500V
C48	1-131-343-00	TANTALUM 0.22 10% 35V
C50	1-108-239-00	MYLAR 0.01 10% 50V
C53	1-107-208-00	MICA 18PF 5% 500V
C54	1-107-208-00	MICA 18PF 5% 500V
C56	1-131-345-00	TANTALUM 0.47 10% 35V
C58	1-123-617-00	ELECT 10 16V
C69	1-102-114-00	CERAMIC 470PF 50V
C75	1-131-361-00	TANTALUM 2.2 10% 20V
C79	1-102-109-00	CERAMIC 180PF 50V
C80	1-131-379-00	TANTALUM 22 10% 10V
C82	1-131-395-00	TANTALUM 100 10% 3.15V
C83	1-107-209-00	MICA 20PF 5% 500V
C86	1-131-395-00	TANTALUM 100 10% 3.15V
C87	1-131-383-00	TANTALUM 10 10% 6.3V
C89	1-131-371-00	TANTALUM 10 10% 16V
C93	1-131-371-00	TANTALUM 10 10% 16V
C94	1-131-371-00	TANTALUM 10 10% 16V
C96	1-102-949-00	CERAMIC 12PF 50V
C97	1-131-341-00	TANTALUM 0.1 10% 35V
C100	1-108-242-00	MYLAR 0.022 10% 50V
C101	1-131-379-00	TANTALUM 22 10% 10V
CN6	1-561-375-11	1P
CN7	1-561-375-11	1P
D1	8-719-815-55	1S1555
D2	8-719-815-55	1S1555
D3	8-719-815-55	1S1555
D4	8-719-815-55	1S1555
D5	8-719-815-55	1S1555
D6	8-719-815-55	1S1555
D7	8-719-815-55	1S1555
D8	8-719-815-55	1S1555
D9	8-719-815-55	1S1555
D10	8-719-815-55	1S1555
D11	8-719-815-55	1S1555
D12	8-719-815-55	1S1555
D13	8-719-815-55	1S1555
D14	8-719-815-55	1S1555
D15	8-719-815-55	1S1555
D16	8-719-709-25	1S1925P
D17	8-719-709-25	1S1925P
D18	8-719-709-25	1S1925P
D19	8-719-709-25	1S1925P
D20	8-719-815-55	1S1555

Ref. No.	Parts No.	Description
D21	8-719-815-55	1S1555
D22	8-719-815-55	1S1555
D23	8-719-136-17	RD3.6E-B
D24	8-719-815-55	1S1555
D25	8-719-815-55	1S1555
D26	8-719-815-55	1S1555
D27	8-719-815-55	1S1555
D28	8-719-815-55	1S1555
DL1	1-415-139-00	0.45μS
DL2	1-415-202-00	0.18μS
DL3	1-415-221-00	1H
FL1	1-231-344-00	TRAP 4.5MHz
IC1	8-758-100-00	CX810; SONY
IC2	8-758-150-00	CX815; SONY
IC3	8-759-990-82	TL082CP; TI
IC4	8-759-240-53	TC4053BP (CD4053BE; RCA)
IC5	8-749-931-10	BX311; SONY
IC6	8-759-907-93	μA796HC; FSC
IC7	8-759-969-13	SN16913P; TI
IC8	8-759-990-82	TL082CP; TI
IC9	8-759-990-84	TL084CN; TI
L2	1-407-173-XX	MICRO 220
L3	1-407-172-XX	MICRO 180
L4	1-407-191-XX	MICRO 470
L5	1-407-191-XX	MICRO 470
L6	1-407-191-XX	MICRO 470
L8	1-407-169-XX	MICRO 100
LV1	1-407-567-00	4.7
LV2	1-407-567-00	4.7
Q1	8-724-375-01	2SC403C
Q2	8-724-375-01	2SC403C
Q3	8-724-375-01	2SC403C
Q4	8-765-221-30	2SC1963-13
Q5	8-723-305-00	2SK43-5

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Ref. No.	Parts No.	Description
Q6	8-729-384-48	2SA844
Q7	8-724-375-01	2SC403C
Q8	8-729-663-47	2SC1364
Q9	8-724-375-01	2SC403C
Q10	8-729-663-47	2SC1364
Q11	9-729-663-47	2SC1364
Q12	8-729-663-47	2SC1364
Q13	8-729-663-47	2SC1364
Q14	8-729-663-47	2SC1364
Q15	8-724-375-01	2SC403C
Q16	8-729-663-47	2SC1364
Q17	8-724-375-01	2SC403C
Q18	8-723-305-00	2SK43-5
Q19	8-729-384-48	2SA844
Q20	8-724-375-01	2SC403C
Q21	8-729-663-47	2SC1364
Q22	8-729-384-48	2SA844
Q23	8-729-384-48	2SA844
Q24	8-724-375-01	2SC403C
Q25	8-724-375-01	2SC403C
Q26	8-729-384-48	2SA844
Q27	8-724-375-01	2SC403C
Q28	8-724-375-01	2SC403C
Q29	8-724-375-01	2SC403C
Q30	8-724-375-01	2SC403C
Q31	8-729-384-48	2SA844
Q32	8-724-375-01	2SC403C
Q33	8-729-384-48	2SA844
Q34	8-729-663-47	2SC1364
Q35	8-729-663-47	2SC1364
Q36	8-724-375-01	2SC403C
Q37	8-729-384-48	2SA844
Q38	8-729-663-47	2SC1364
Q39	8-729-384-48	2SA844
Q40	8-729-663-47	2SC1364
Q41	8-724-375-01	2SC403C
Q42	8-729-663-47	2SC1364
Q43	8-729-663-47	2SC1364
Q44	8-724-375-01	2SC403C
Q45	8-729-663-47	2SC1364
Q46	8-724-375-01	2SC403C
Q47	8-723-305-00	2SK43-5
Q48	8-723-305-00	2SK43-5
R82	1-246-489-00	CARBON 4.7K 5% 1/4W
R150	1-214-178-00	METAL 82K 1% 1/4W
R181	1-214-180-00	METAL 100K 1% 1/4W

Ref. No.	Parts No.	Description
RV1	1-226-709-00	SOLID 4.7K
RV2	1-226-709-00	SOLID 4.7K
RV3	1-226-771-00	SOLID 1K
RV4	1-226-770-00	METAL 470
RV5	1-226-709-00	SOLID 4.7K
RV6	1-226-709-00	SOLID 4.7K
RV7	1-226-709-00	SOLID 4.7K
RV8	1-226-710-00	SOLID 10K
RV9	1-226-708-00	SOLID 2.2K
RV10	1-226-708-00	SOLID 2.2K
RV11	1-226-709-00	SOLID 4.7K
RV12	1-226-770-00	METAL 470
RV13	1-226-703-00	METAL 10K
RV14	1-226-771-00	METAL 1K
RV15	1-226-701-00	METAL 220
RV16	1-226-709-00	SOLID 4.7K

PW-53 BOARD

	A-7511-516-A	MOUNTED CIRCUIT BOARD "PW-53"
C3	1-107-049-00	MICA 8.2PF 10% 500V
C4	1-107-208-00	MICA 18PF 5% 500V
C5	1-131-371-00	TANTALUM 10 10% 16V
C8	1-131-361-00	TANTALUM 2.2 10% 20V
C9	1-131-345-00	TANTALUM 0.47 10% 35V
C10	1-108-240-00	MYLAR 0.015 10% 50V
C13	1-102-112-00	CERAMIC 330PF 10% 50V
C14	1-102-112-00	CERAMIC 330PF 10% 50V
C15	1-102-112-00	CERAMIC 330PF 10% 50V
D1	8-719-982-04	ERB81-004
D2	8-719-102-51	1SZ51
IC1	8-759-729-03	NJM2903D; JRC

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Ref. No.	Parts No.	Description
L1	1-421-013-00	CHOKE 25
L2	1-408-144-00	206
L3	1-421-013-00	CHOKE 25
Q1	8-760-524-10	2SA772-24
Q2	8-760-524-10	2SA772-24
Q3	8-760-524-10	2SA772-24
Q4	8-724-375-01	2SC403C
Q5	8-763-213-00	2SA861
Q6	8-724-375-01	2SC403C
R12	1-246-461-00	CARBON 330 5% 1/4W
RV1	1-226-771-00	METAL 1K
RV2	1-226-771-00	METAL 1K

SG-34 BOARD

A-7511-520-A	MOUNTED CIRCUIT BOARD "SG-34" (DXC-1800P)
A-7511-652-A	MOUNTED CIRCUIT BOARD "SG-34" (DXC-1800PM)

C3	1-131-377-00	TANTALUM 10 10% 10V
C5	1-131-344-00	TANTALUM 0.33 10% 35V
C6	1-131-341-00	TANTALUM 0.1 10% 35V
C8	1-131-341-00	TANTALUM 0.1 10% 35V
C10	1-131-380-00	TANTALUM 33 10% 10V
C11	1-131-374-00	TANTALUM 33 10% 16V
C12	1-131-374-00	TANTALUM 33 10% 16V
C13	1-107-208-00	MICA 18PF 5% 500V
C15	1-131-377-00	TANTALUM 10 10% 10V
C18	1-131-377-00	TANTALUM 10 10% 10V
C19	1-108-227-00	MYLAR 0.001 10% 50V
C20	1-131-377-00	TANTALUM 10 10% 10V
C21	1-131-380-00	TANTALUM 33 10% 10V
C23	1-131-347-00	TANTALUM 1 10% 35V
C27	1-131-380-00	TANTALUM 33 10% 10V

Ref. No.	Parts No.	Description
C29	1-131-381-00	TANTALUM 47 10% 10V
C30	1-131-369-00	TANTALUM 4.7 10% 16V
C31	1-131-380-00	TANTALUM 33 10% 10V
C35	1-107-208-00	MICA 18PF 5% 500V
C37	1-131-341-00	TANTALUM 0.1 10% 35V
C38	1-131-370-00	TANTALUM 6.8 10% 16V
C39	1-131-377-00	TANTALUM 10 10% 10V
C41	1-107-208-00	MICA 18PF 5% 500V
C43	1-131-341-00	TANTALUM 0.1 10% 35V
C44	1-131-370-00	TANTALUM 6.8 10% 16V
C45	1-102-363-00	CERAMIC FEED-THROUGH 0.001 50V
C46	1-102-242-00	CERAMIC FEED-THROUGH 3PF 50V
C47	1-102-363-00	CERAMIC FEED-THROUGH 0.001 50V
C48	1-102-363-00	CERAMIC FEED-THROUGH 0.001 50V
*C48	1-102-246-00	CERAMIC FEED-THROUGH 47PF 150V
C49	1-102-246-00	CERAMIC FEED-THROUGH 47PF 150V
C50	1-102-246-00	CERAMIC FEED-THROUGH 47PF 150V
C51	1-102-246-00	CERAMIC FEED-THROUGH 47PF 150V
C52	1-102-246-00	CERAMIC FEED-THROUGH 47PF 150V
C53	1-102-246-00	CERAMIC FEED-THROUGH 47PF 150V
C54	1-102-246-00	CERAMIC FEED-THROUGH 47PF 150V
C55	1-102-246-00	CERAMIC FEED-THROUGH 47PF 150V
C56	1-102-246-00	CERAMIC FEED-THROUGH 47PF 150V
C57	1-102-246-00	CERAMIC FEED-THROUGH 47PF 150V
C58	1-102-246-00	CERAMIC FEED-THROUGH 47PF 150V
C59	1-102-363-00	CERAMIC FEED-THROUGH 0.001 50V
*C59	1-102-246-00	CERAMIC FEED-THROUGH 47PF 150V
C60	1-102-363-00	CERAMIC FEED-THROUGH 0.001 50V
C62	1-131-369-00	TANTALUM 4.7 10% 16V
C65	1-102-246-00	CERAMIC FEED-THROUGH 47PF 150V

* (AEP : Ser. No. 10271 and Higher
UK : Ser. No. 50031 and Higher)

D1	8-719-815-55	1S1555
IC1	8-759-131-10	μPC311C; NEC
IC2	8-759-901-07	SN74LS107AN; TI
IC3	8-759-902-21	SN74LS221N; TI
IC4	8-757-731-00	CX773A; SONY
IC5	8-759-990-62	TL062CP
IC6	8-757-903-00	CX7903; SONY
IC7	8-759-901-23	SN74LS123N; TI
IC8	8-759-135-80	μPC358C
IC9	8-759-240-53	TC4053BP (CD4053BE; RCA)
IC10	8-759-240-11	TC4011BP (CD4011BE; RCA)

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Ref. No.	Parts No.	Description
L1	1-407-169-XX	MICRO 100
L2	1-407-169-XX	MICRO 100
L3	1-407-163-XX	MICRO 33
L4	1-407-164-XX	MICRO 39
L5	1-408-355-00	MICRO 100 (DXC-1800P)
L5	1-408-021-00	MICRO 150 (DXC-1800PM)
L6	1-407-164-XX	MICRO 39
L7	1-407-164-XX	MICRO 39
L8	1-407-164-XX	MICRO 39
L9	1-407-164-XX	MICRO 39
L10	1-407-164-XX	MICRO 39
L11	1-407-164-XX	MICRO 39
L12	1-407-163-XX	MICRO 33
L13	1-407-164-XX	MICRO 39
Q1	8-724-375-01	2SC403C
Q2	8-729-663-47	2SC1364
Q3	8-729-663-47	2SC1364
Q4	8-729-384-48	2SA844
Q5	8-729-384-48	2SA844
Q6	8-729-663-47	2SC1364
Q7	8-729-384-48	2SA844
Q8	8-724-375-01	2SC403C
Q9	8-724-375-01	2SC403C
Q10	8-765-212-20	2SA925
Q11	8-765-212-20	2SA925
Q12	8-729-384-48	2SA844
Q13	8-723-305-00	2SK43-5
Q14	8-724-375-01	2SC403C
R2	1-247-839-00	CARBON 2200 5% 1/6W
R5	1-247-829-00	CARBON 820 5% 1/6W
R12	1-247-851-00	CARBON 6800 5% 1/6W
R20	1-247-845-00	CARBON 3900 5% 1/6W
R21	1-247-859-00	CARBON 15K 5% 1/6W
R51	1-246-481-00	CARBON 2.2K 5% 1/4W
R82	1-214-170-00	METAL 39K 1% 1/4W
R86	1-247-767-00	CARBON 2200 5% 1/6W
R87	1-247-767-00	CARBON 2200 5% 1/6W
R88	1-247-767-00	CARBON 2200 5% 1/6W
R89	1-247-767-00	CARBON 2200 5% 1/6W
R90	1-247-767-00	CARBON 2200 5% 1/6W
RV1	1-226-772-00	METAL 4.7K
RV2	1-226-703-00	METAL 10K
VCO1	1-527-585-00	17.734475 MHz (DXC-1800P)
VCO1	1-527-798-00	14.3024 MHz (DXC-1800PM)
VCO2	1-527-729-00	14.1875 MHz (DXC-1800P)
VCO2	1-527-478-00	14.31818 MHz (DXC-1800PM)

Ref. No.	Parts No.	Description
FRAME		
	1-547-044-00	DISK, FILTER
	8-701-022-29	SMF TRINICON WITH FOCUS COIL AND TIMMER CT-2222
C1	1-108-246-00	MYLAR 0.047 10% 50V
C1001	1-130-104-00	POLYESTER 0.047 10% 600V
CN1	1-507-251-XX	JACK, MINI JM-35 M-10 "INTERCOM"
CN2	1-509-891-00	BNC "VIDEO OUT"
CN3	1-509-891-00	BNC "GEN LOCK IN"
CN4	1-561-562-00	4P, WITH SWITCH "DC IN 12V"
CN5	1-507-251-XX	JACK, MINI JM-35 M-10 "EXT MIC"
CN11	1-526-612-00	SOCKET, PICK UP TUBE
CN101	1-561-348-00	RECEPTACLE, 8P FEMALE "LENS"
CN102	1-561-320-00	RECEPTACLE, 8P FEMALE DIN "VF"
CN103	1-561-348-00	RECEPTACLE, 8P FEMALE "REMOTE"
CN201	1-508-942-00	RECEPTACLE, 14P MALE Q-TYPE
MIC1	8-814-200-70	ECM C-1003F UP TO (S/N) 14450 (AEP) UP TO (S/B) 50650 (UK) 8-814-189-31 ECM C-1007A (S/N) 14451 AND LATER (AEP) (S/N) 50651 AND LATER (UK)
Q1	8-729-316-16	2SC1061
Q2	8-729-317-12	2SA671
Q3	8-729-317-12	2SA671
RV1	1-226-917-00	CARBON 10K (B) "H PHASE"
RV2	1-226-917-00	CARBON 10K (B) "SC PHASE"
S1	1-516-781-XX	SLIDE "VF VIDEO"
S2	1-516-779-XX	SLIDE "SC PHASE COARSE"
S3	1-553-431-00	TOGGLE "VTR START/RETURN VIDEO"
S4	1-516-779-XX	SLIDE "ABL"
S5	1-516-779-XX	SLIDE "BARS/CAMERA"

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5-3. PACKING MATERIAL AND ACCESSORIES

Ref. No.	Parts No.	Description
	A-7401-044-A	BRACE ASS'Y (VCT-8)
	A-7401-045-A	CASE ASS'Y CARRYING
	X-3705-053-0	**HOOD CAP ASS'Y**
	1-551-661-00	CAMERA CABLE WITH 14P PLUGS (CCQ-2AR)
	1-508-929-00	**PLUG, 14P MALE Q-TYPE**
	1-561-043-00	**PLUG, 14P FEMALE Q-TYPE**
	1-555-073-00	CAMERA CABLE WITH 14P/10P PLUGS (CCQJ-2)
	1-508-171-00	**PLUG, 10P MALE J-TYPE**
	2-042-385-00	**CAP, LENS MOUNT**
	3-706-459-00	**HOOD, LENS**
	3-783-324-11	**MANUAL, INSTRUCTION**

FOR DXC-1800PK/PL

	2-047-516-00	**BAG, POLY FOR CAMERA**
	3-664-261-00	CUSHION, UPPER (A)
	3-664-262-00	CUSHION, UPPER (B)
	3-664-263-00	CUSHION, LOWER
	3-664-274-00	CARTON, INDIVIDUAL/L
	3-664-277-00	CARTON, INDIVIDUAL/K

FOR DXC-1800PH

	3-664-271-00	CARTON, INDIVIDUAL
	3-664-272-00	CUSHION, UPPER
	3-664-273-00	CUSHION, LOWER
	3-701-630-00	**BAG, POLY FOR CAMERA**

STANDARD PRODUCT

ZOOM LENS VCL-1106YB (F1.4, f11 – 70mm)

5-4. FIXTURE (OPTIONAL)

Ref. No.	Parts No.	Description
	J-6020-170-A	**MECHANICAL FOCUS ADJUSTMENT JIG**
	J-6023-420-A	**4.5MHz OSCILATOR JIG**
	J-6020-500-A	**RED FILTER**
	J-6020-680-A	**PATTERN BOX, PTB-220 (FOR 190 TO 240 Vac)**
	J-6021-870-A	**RESOLUTION CHART**
	J-6022-070-A	**SONY SPECIFIED VECTORSCOPE SCALE**
	J-6040-070-A	**ECCENTRIC SCREWDRIVER**

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DXF-3CE

1½-INCH ELECTRONIC VIEWFINDER

SPECIFICATIONS

Picture tube:	1½-inch monochrome, electrostatic focus
Video signal:	CCIR standards
Scanning system:	625 lines 2:1 interlace
Video input:	1 Vp-p, sync negatine, 1 kohms
Horizontal resolution:	350 lines
Connector:	DIN 8 pin
Power requirements:	12 Vdc
Power consumption:	2.3 W
Operating temperature:	0°C to 40°C (32°F to 104°F)
Dimensions:	Approx. 60 x 170 x 150 (w/h/d)
Weight:	Approx. 540 g (1lB 3oz)

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3-3. Schematic Diagram 11

4. SPARE PARTS AND FIXTURE

4-1. Exploded View 13
4-2. Electrical Parts List 15

SAFETY RELATED COMPONENT WARNING

Components identified by shading and ⚠ marked on the schematic diagrams and parts list are critical to safe operation. Replace these components with SONY parts whose part numbers appear as shown in this manual or in supplements published by SONY.

X-RAY RADIATION WARNING

Be sure that parts replacement in the high voltage block and adjustments made to the high voltage circuits are carried out precisely in accordance with the procedures given in this manual.

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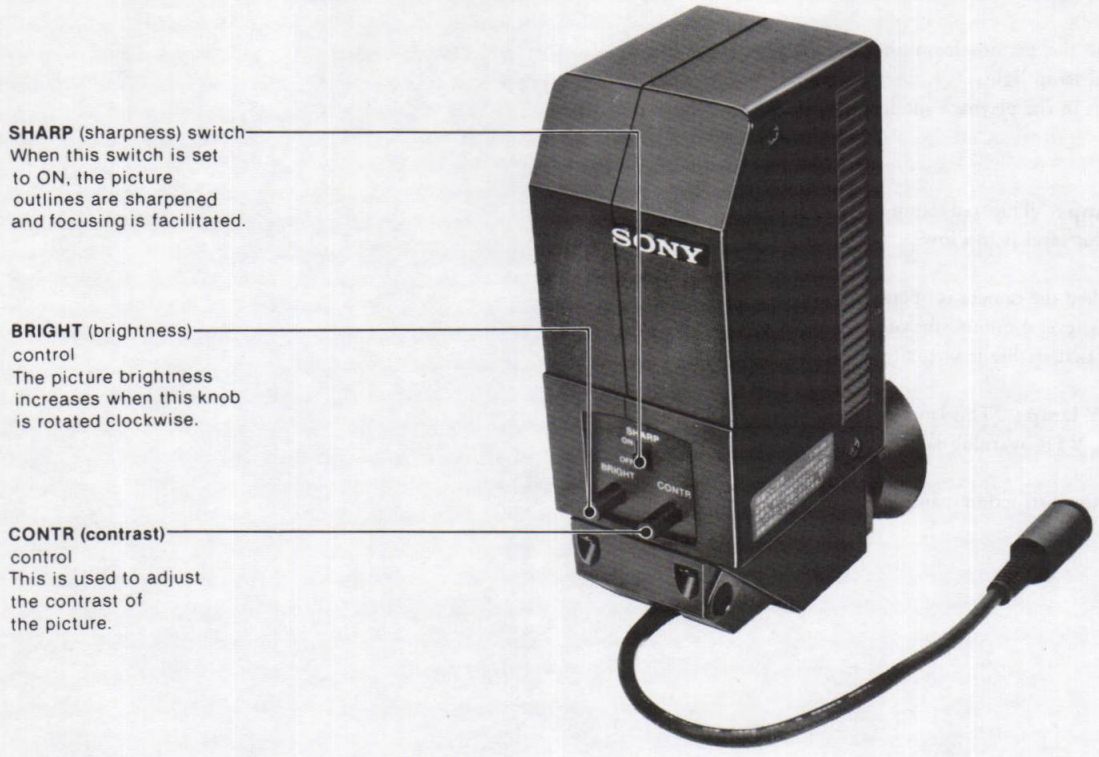
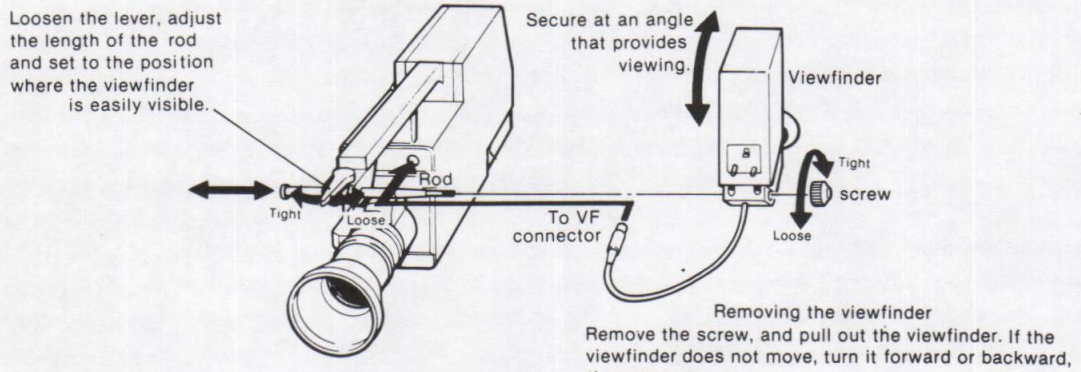
SECTION 1
GENERAL DESCRIPTION

1-1. LOCATION AND FUNCTION OF PARTS

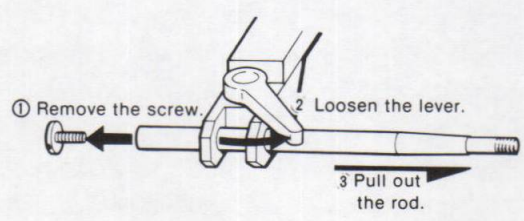

SHARP (sharpness) switch
When this switch is set to ON, the picture outlines are sharpened and focusing is facilitated.
BRIGHT (brightness) control
The picture brightness increases when this knob is rotated clockwise.
CONTR (contrast) control
This is used to adjust the contrast of the picture.
SONY
CONTR

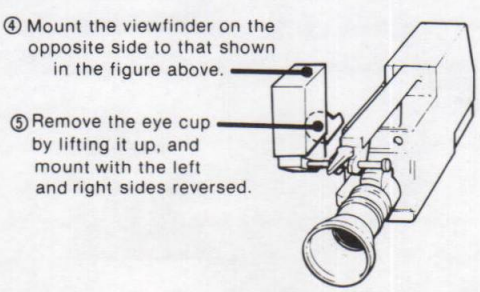
1-2. MOUNTING ON THE CAMERA



Removing the viewfinder
Remove the screw, and pull out the viewfinder. If the viewfinder does not move, turn it forward or backward, then remove.

Use While Resting on The Left Shoulder




④ Mount the viewfinder on the opposite side to that shown in the figure above.
⑤ Remove the eye cup by lifting it up, and mount with the left and right sides reversed.

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1-3. OPERATION

❶ Turn on the power to the camera ; the power is supplied to the viewfinder automatically.
❷ Adjust the angle of the viewfinder screen for easy viewing, and fix with the screw on the bottom.
❸ Adjust the CONTR, BRIGHT and SHARP controls for the best picture.
❹ While recording, the picture from the camera appears on the screen, and the REC lamp lights.
When the recorder is in the playback mode, the playback picture appears on the screen.

LOW LIGHT lamp : This red lamp lights to warn that the camera's video output level is too low.

BATT lamp : When the camera is operated with the battery adaptor, this lamp blinks several minutes before the battery is completely discharged to warn that its life is virtually over.

REC/WB/TALLY lamp : This lamp functions as the REC lamp, white balance lamp, VTR warning lamp and tally lamp.

For details, refer to the instruction manual furnished with the camera.

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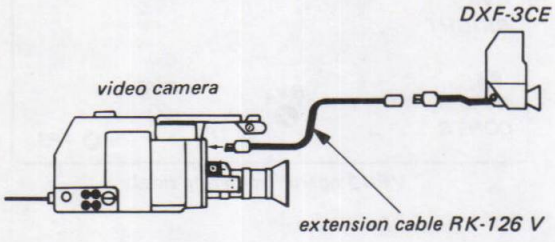
SECTION 2
ALIGNMENT

2-1. EQUIPMENT REQUIRED

1. Pattern Box. PTB-220: SONY Parts No. J-6020-680-A
2. Resolution Pattern : SONY Parts No. J-6021-870-A
3. Dual-Trace Oscilloscope
4. Monitor TV
5. Video Camera, DXC-1800P (completed the adjustments)
6. AC Adaptor, CMA-7CE
7. DC Voltmeter

2-2. CONNECTION

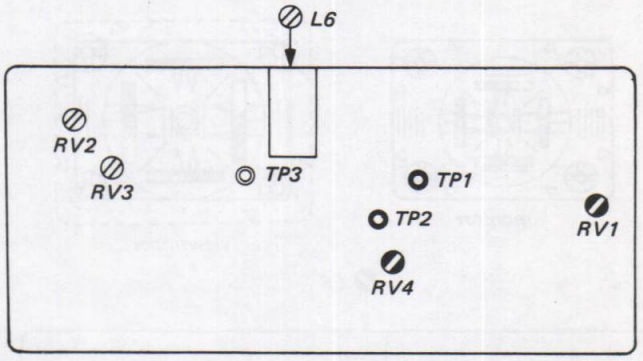


2-3. 9 V REGULATOR ADJUSTMENT

Equipment : DC Voltmeter
Test point : TP1 (GND: TP2)/VF-13 board
Adj point : ◐ RV1/VF-13 board
Spec : 9.0 ± 0.05 Vdc

2-4. FOCUS ADJUSTMENT

Object : Resolution Pattern
Adjustment : Shoot the resolution pattern and adjust ◐ RV4/VF-13 board for the best resolution of the viewfinder picture.

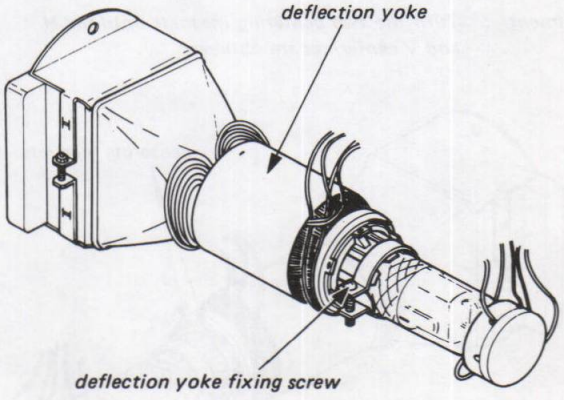


VF-13 board (soldering side)

Note: *After completing this adjustment, proceed to section 2-6.*

2-5. DEFLECTION YOKE TILT ADJUSTMENT

Adjustment :
1. *Loosen the deflection yoke fixing screw and turn the deflection yoke until the tilt of the viewfinder picture is corrected.*
2. *Tighten the deflection yoke fixing screw. (Do not tighten too much.)*



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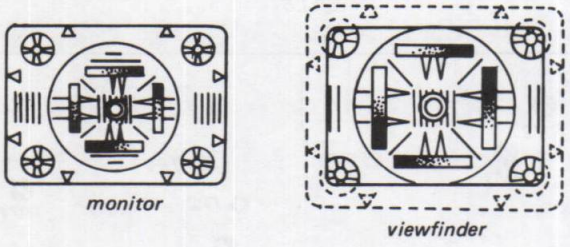
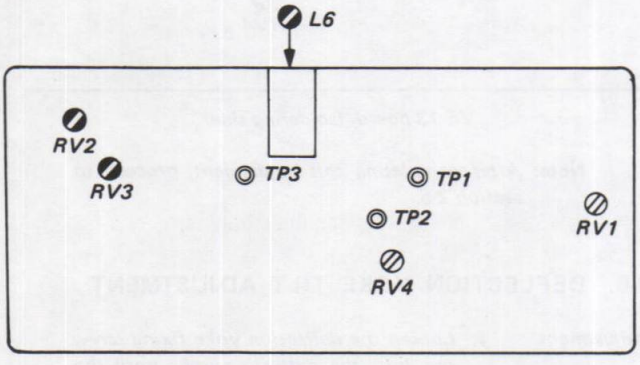
2-6. V·H DEFLECTION SIZE ADJUSTMENT

Object : *Resolution Pattern*
Preparation : 1. *Set the external BRIGHT and CONTR controls to the mechanical center position.*
2. *Adjust the lens' zoom control so that the resolution pattern fills the viewfinder screen.*
Adjustment : 1. *The picture must overscan by 5% with respect to the longitudinal frame of the viewfinder and the longitudinal balance of the circule must be good.*
● *RV2/VF-13 board (V SIZE)*
● *RV3/VF-13 board (V LIN)*
2. *The circules in the viewfinder picture must be round.*
● *L6/VF-13 board (H SIZE)*



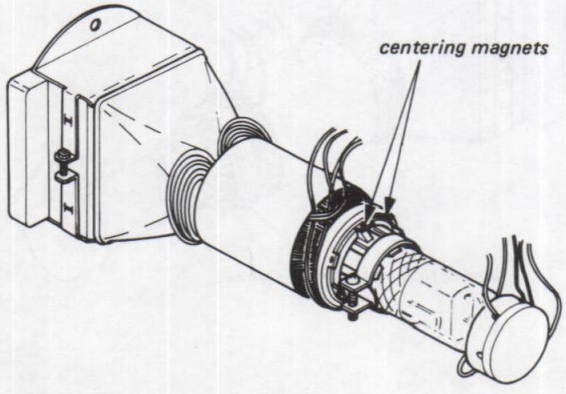


VF-13 board (soldering side)

2-7. CENTERING ADJUSTMENT

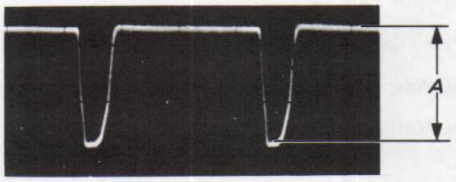
Note: *Confirm that section 2-6 is completed.*

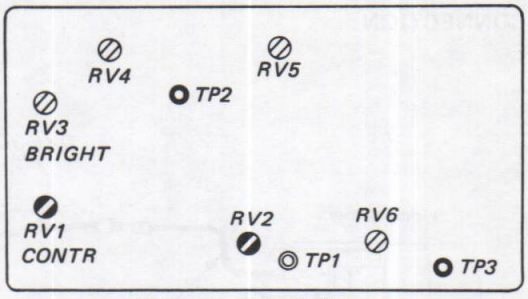
Adjustment : *Turn the two centering magnets until the H and V centerings are obtained.*



2-8. DC BALANCE ADJUSTMENT

Equipment : *Oscilloscope*
Camera iris opening : *C*
Adjustment : *Adjust ● RV2/VF-12 board so that the "A" level stays in the same level all the way when ● RV1 (CONTR)/VF-12 board is turned ↺ or ↻.*

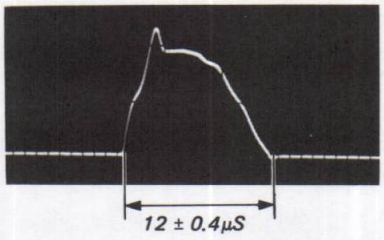


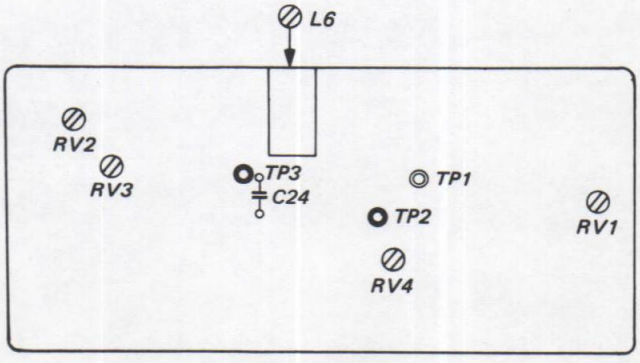


VF-12 board (soldering side)

2-9. FB PULSE WIDTH ADJUSTMENT

Equipment : *Oscilloscope*
Test point : *TP3 (GND: TP2)/VF-13 board*
Trig : *TP3/VF-13 board*
Adjustment : *Choose 0.001μF, 0.0015μF or 0.0022μF for C24/VF-13 board to satisfy the specification.*





VF-13 board (soldering side)

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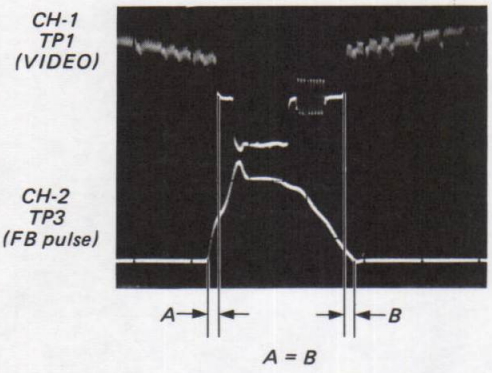
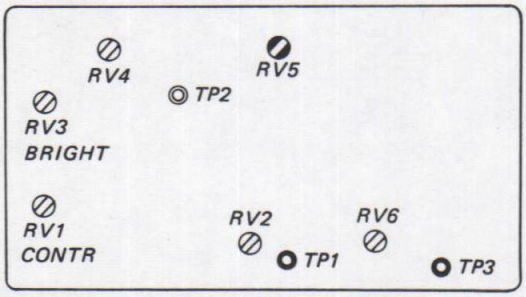
2-10. H HOLD ADJUSTMENT

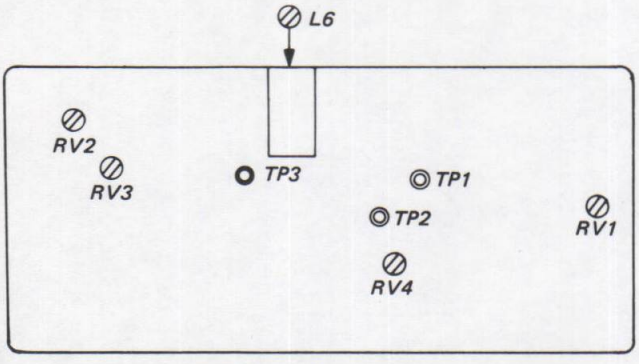
Equipment : Dual-trace Oscilloscope
Test point : CH1 TP1 (GND: TP3)/VF-12 board
CH2 TP3 (GND: chassis)/VF-13 board
Mode : ALT
Trig : TP3/VF-13 board
Adj point : ◐ RV5/VF-12 board



A = B



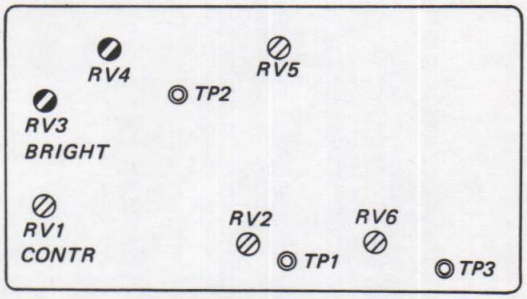
VF-12 board (soldering side)



VF-13 board (soldering side)

2-11. BRIGHT CAL ADJUSTMENT

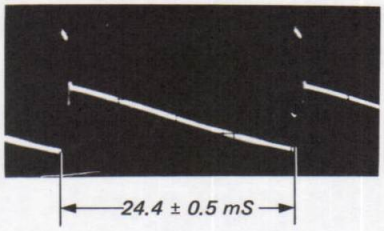
Camera iris opening : C
Adjustment : 1. Set ◐ RV3 (external BRIGHT)/VF-12 board to fully counterclockwise ↶.
2. Adjust ◐ RV4/VF-12 board until the raster on the viewfinder screen is disappeared.

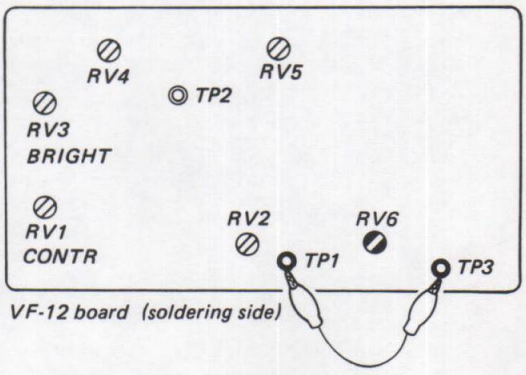


VF-12 board (soldering side)

2-12. V HOLD ADJUSTMENT

Equipment : Oscilloscope
Test point : CN3-2 pin (GND: chassis)/VF-13 board
Trig : CN2-3 pin/VF-13 board
Preparation : Connect a wire between TP1 and TP2 on the VF-12 board.
Adj point : ◐ RV5/VF-12 board





VF-12 board (soldering side)

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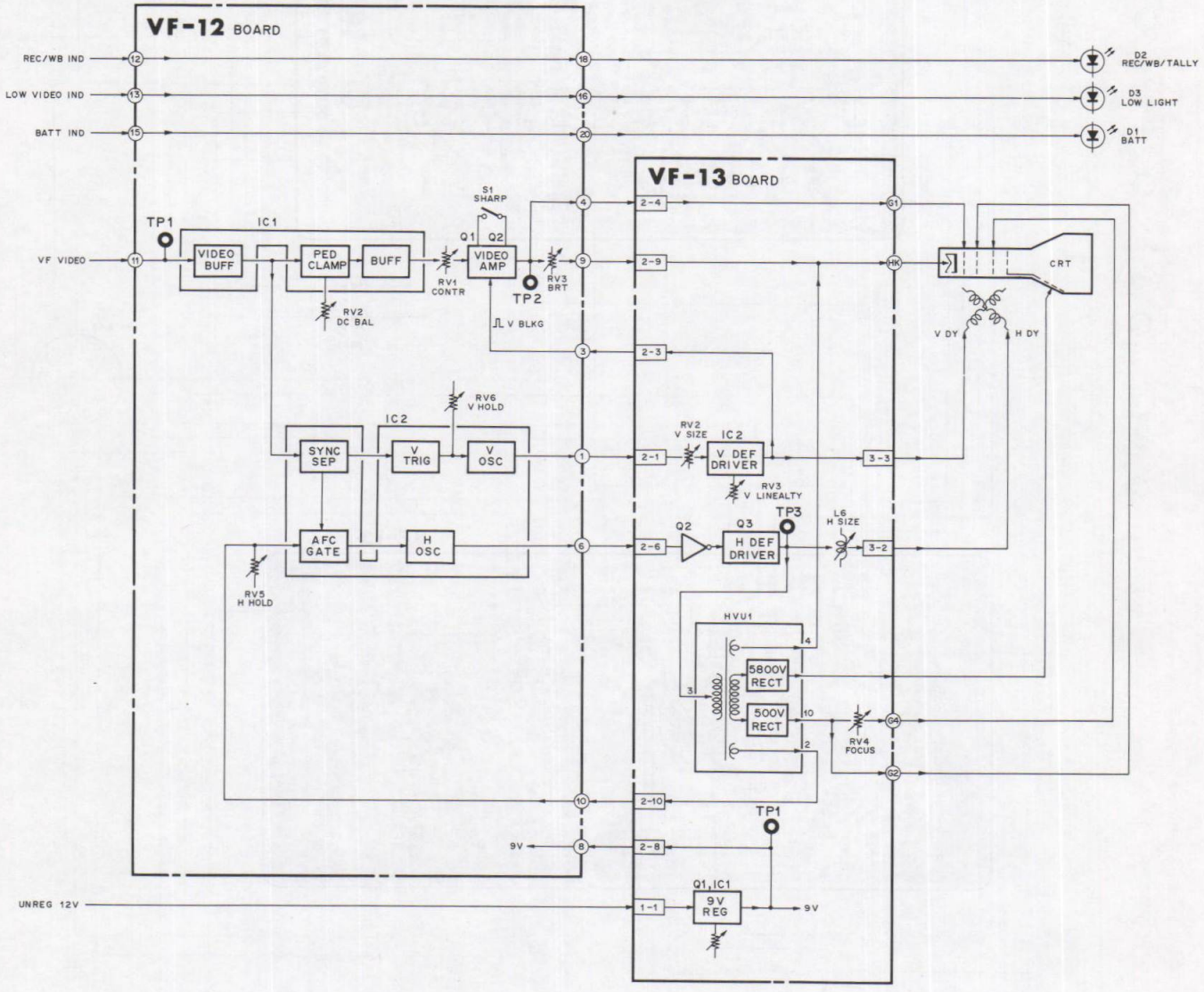
SECTION 3
DIAGRAMS

3-1. BLOCK DIAGRAM



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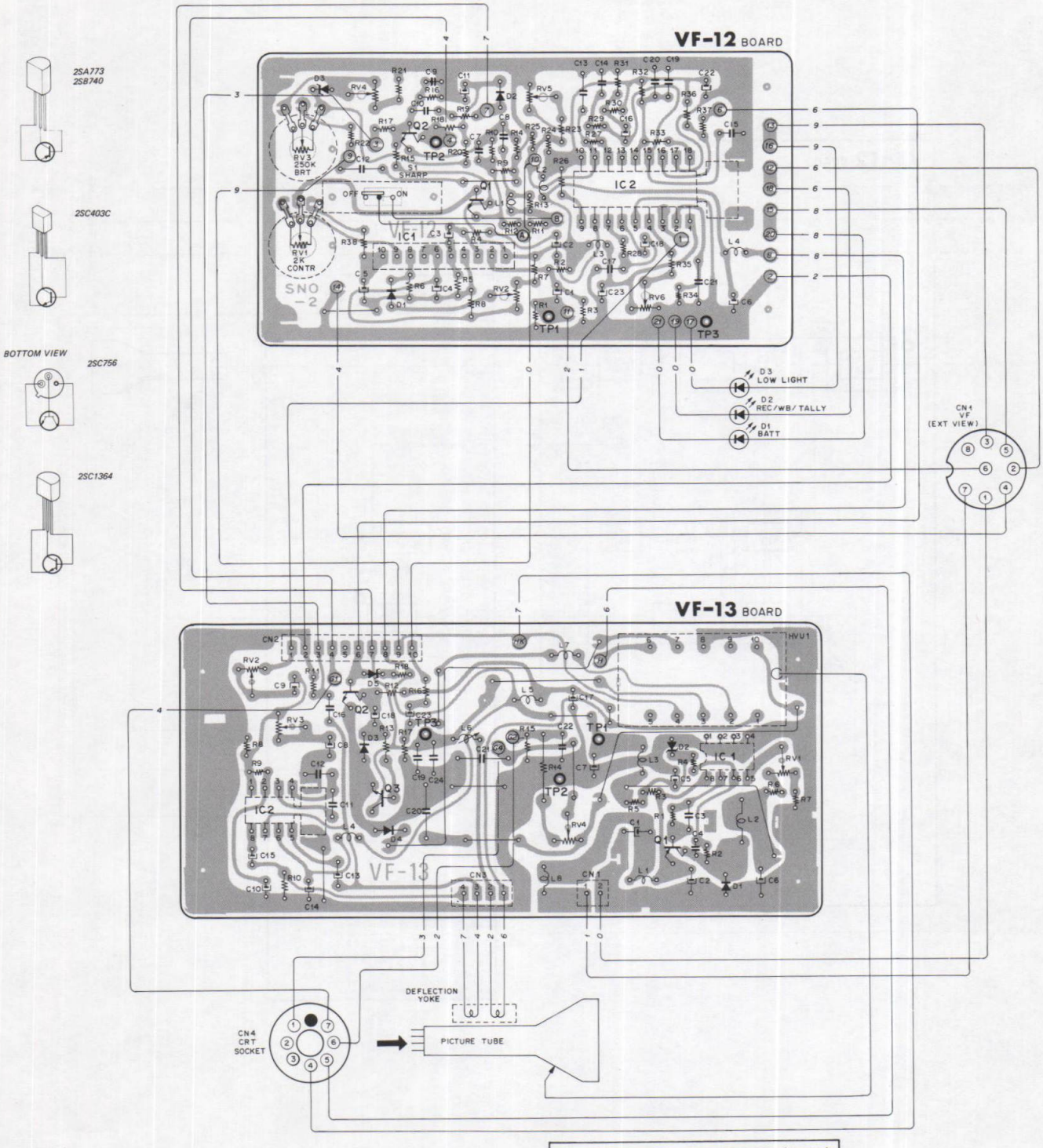
3-2. MOUNTING DIAGRAM

– SOLDERING SIDE –



Serial No. Up to 15600 (AEP)
Serial No. Up to 50850 (UK)

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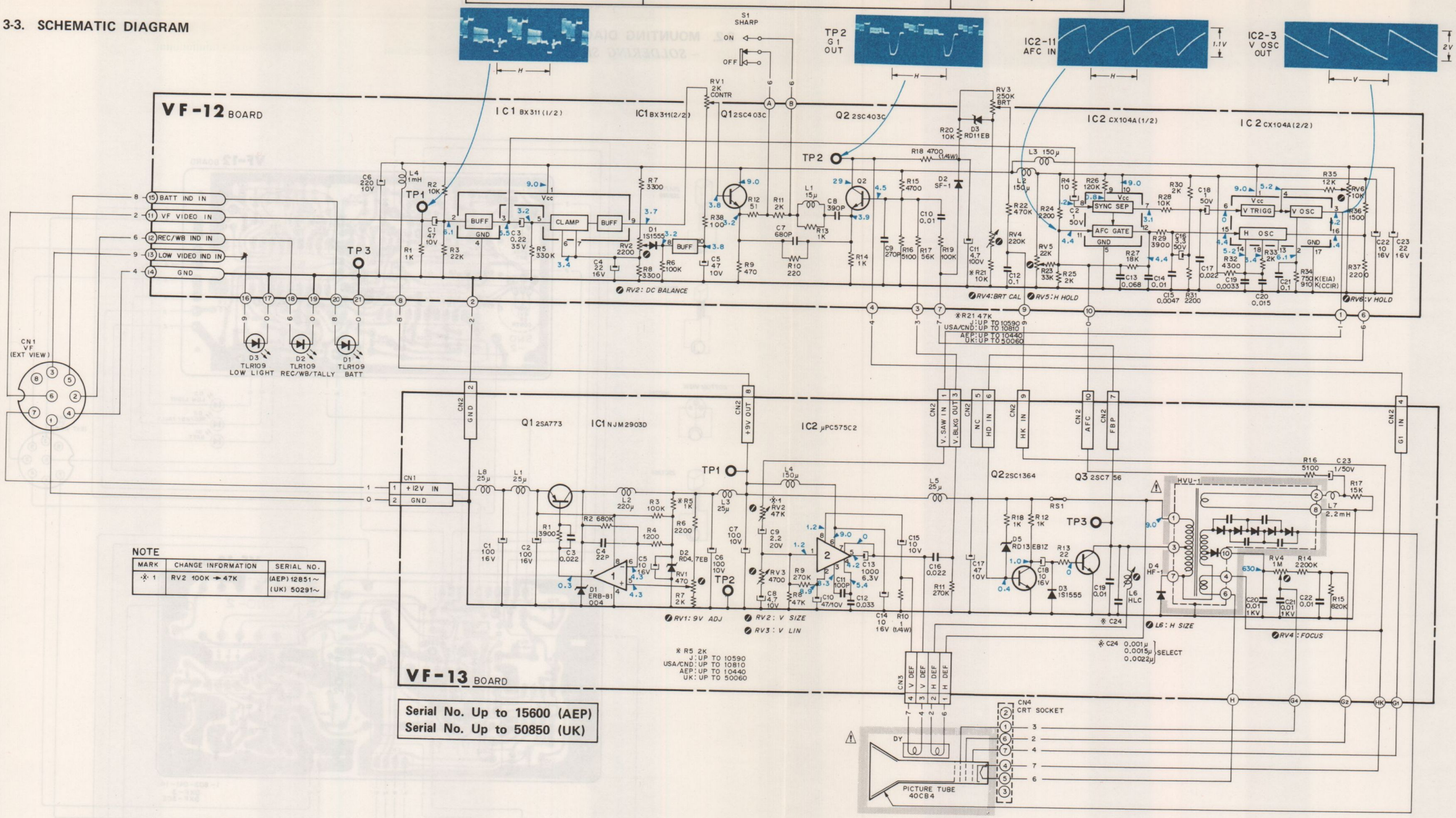
3-3. SCHEMATIC DIAGRAM



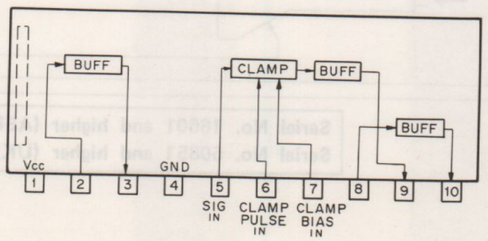
VF-13 BOARD

Serial No. Up to 15600 (AEP)
Serial No. Up to 50850 (UK)

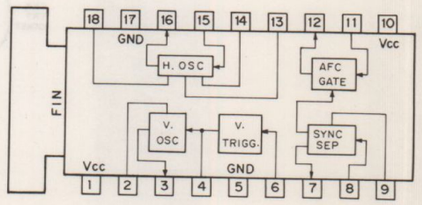
NOTE

MARK	CHANGE INFORMATION	SERIAL NO.
※1	RV2 100K → 47K	(AEP) 12851～ (UK) 50291～

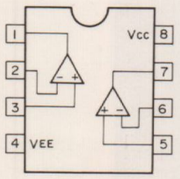
BX311 (SONY)
CLAMPER
—REAR VIEW—



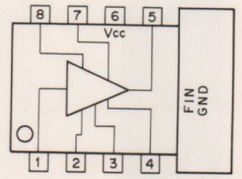
CX104A (SONY)
TV V/H OSC
—TOP VIEW—



NJM2903D (JRC)
OPERATIONAL AMPLIFIER
—TOP VIEW—



μPC575C2 (NEC)
POWER AMPLIFIER
—TOP VIEW—



NOTE:

1. All voltages are dc, measured with a VOLTMETER (input resistance 10MΩ).
2. All waveforms are taken in conditions below.
   - Shoot the color-bar pattern where a white bar is illuminated by 3200°K lamp for 706 $^{+25}_{-47}$ cd/m² (nt). Adjust lens iris of Sony camera DXC-1800P so that a video level at TP1/PR-25 board is 200 mV.
   - Specified picture size, referring to section 3-9-6 in DXC-1800P technical manual.
   - Set camera GAIN switch to 0 dB position.
3. The shaded and ⚠ -marked components are critical to safety.
   Replace only with same component as specified.

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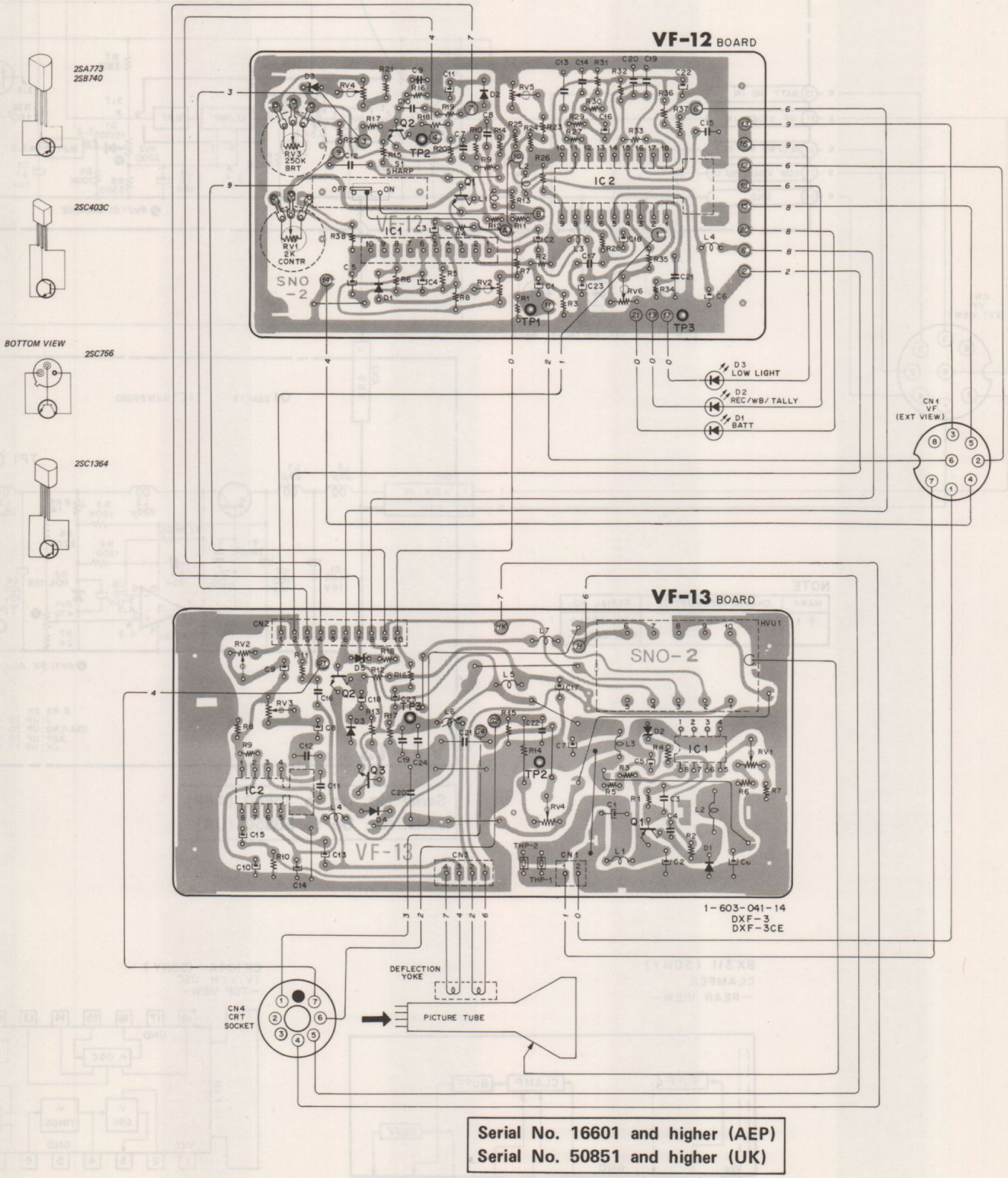
3-2. MOUNTING DIAGRAM

– SOLDERING SIDE –



Serial No. 16601 and higher (AEP)
Serial No. 50851 and higher (UK)

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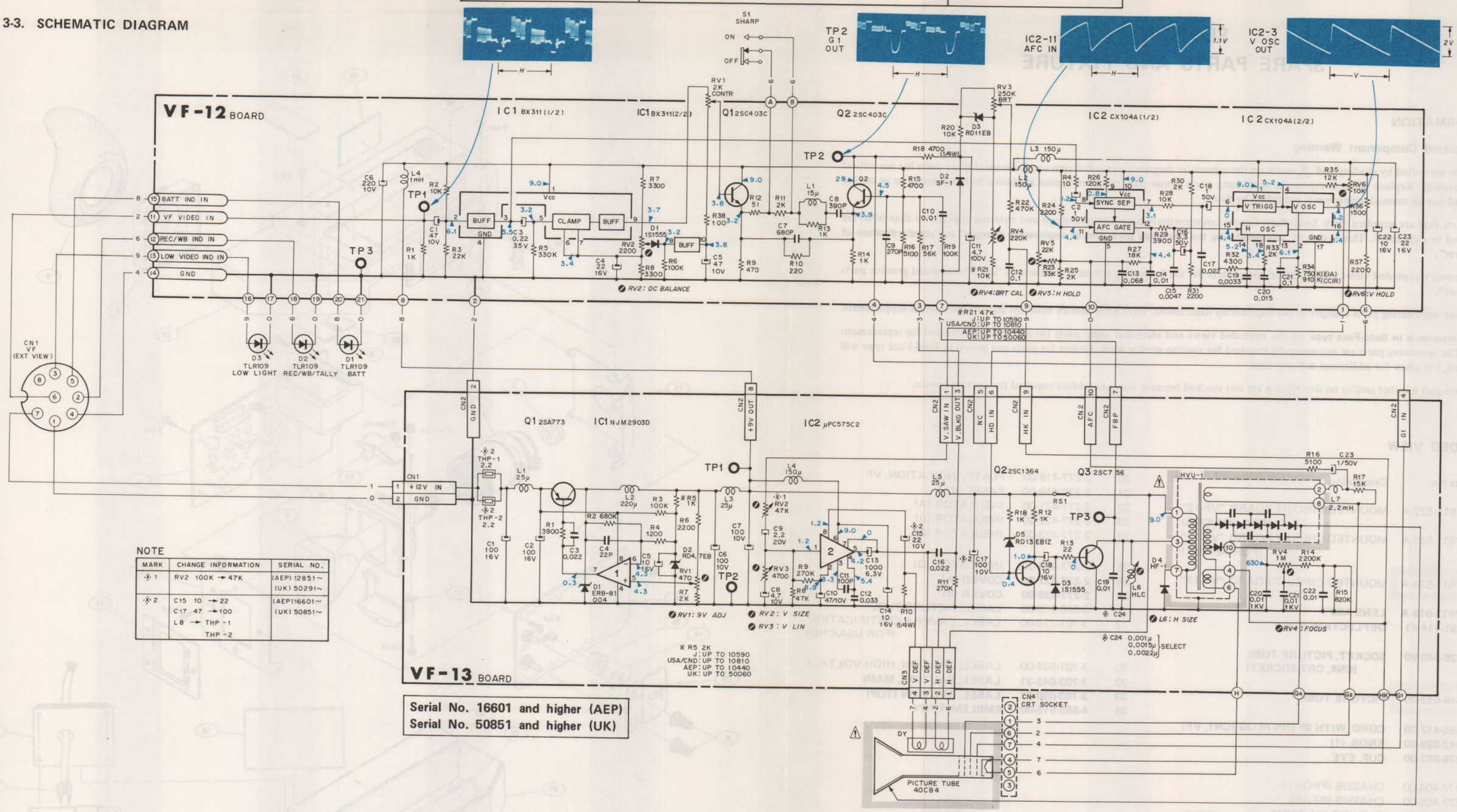
3-3. SCHEMATIC DIAGRAM

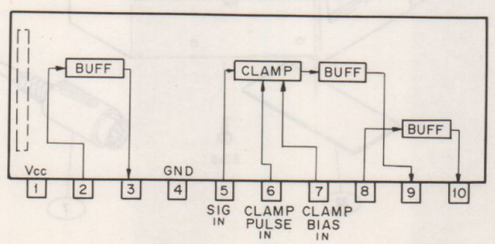


NOTE

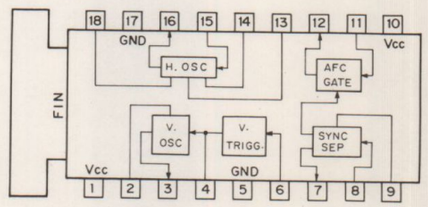
MARK	CHANGE INFORMATION	SERIAL NO.
※1	RV2 100K → 47K	(AEP) 12851~ (UK) 50291~
※2	C15 10 → 22 C17 47 → 100 L8 → THP-1 THP-2	(AEP) 16601~ (UK) 50851~

Serial No. 16601 and higher (AEP)
Serial No. 50851 and higher (UK)

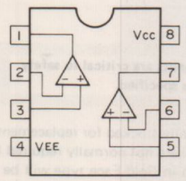
BX311 (SONY)
CLAMPER
—REAR VIEW—



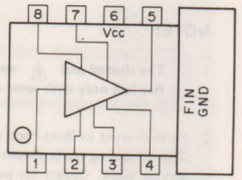
CX104A (SONY)
TV V/H OSC
—TOP VIEW—



NJM2903D (JRC)
OPERATIONAL AMPLIFIER
—TOP VIEW—



μPC575C2 (NEC)
POWER AMPLIFIER
—TOP VIEW—



NOTE:

1. All voltages are dc, measured with a VOLTMETER (input resistance 10MΩ).
2. All waveforms are taken in conditions below.
   - Shoot the color-bar pattern where a white bar is illuminated by 3200°K lamp for 706 $^{+25}_{-47}$ cd/m² (nt). Adjust lens iris of Sony camera DXC-1800P so that a video level at TP1/PR-25 board is 200 mV.
   - Specified picture size, referring to section 3-9-6 in DXC-1800P technical manual.
   - Set camera GAIN switch to 0 dB position.
3. The shaded and ⚠-marked components are critical to safety.
   Replace only with same component as specified.

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SECTION 4
SPARE PARTS AND FIXTURE

PARTS INFORMATION

1. **Safety Related Component Warning**

   Components identified by shading and ⚠-mark on the schematic diagrams, exploded views and electrical spare parts list are critical to safe operation. Replace these components with Sony parts whose part numbers appear as shown in this manual or in service bulletins and service manual supplements published by Sony.

2. Replace Parts that are supplied from Sony Parts Center can sometimes have different shape and external appearance than what are actually used in equipment. This is due to **"accomodating the improved parts and/or engineering changes"** or **"standardization of genuine parts"**.

   - This manual's exploded views and electrical spare parts list are indicating the parts numbers of "the standardized genuine parts at present".
   - Regarding engineering parts changes in our engineering dapartment, refer Sony service bulletins and service manual supplements.

3. **Printed Components in Bold-Face type** on the exploded views and electrical spare parts list are normally stocked for replacement purposes. The remaining parts are not normally required for routine service work. Orders for parts not shown in Bold-Face type will be processed, but allow for additional delivery time.

4. Item with no part number and/or no description are not stocked because they are seldom required for routine service.

4-1. EXPLODED VIEW

No.	Parts No.	Description
1	A-7511-522-A	MOUNTED CIRCUIT BOARD "VF-12" (FOR USA/CND)
1	A-7511-523-A	MOUNTED CIRCUIT BOARD "VF-12" (FOR AEP/UK)
⚠ 2	A-7511-524-A	MOUNTED CIRCUIT BOARD "VF-13"
3	**A-7613-019-A**	**LENS ASS'Y**
4	**1-451-114-41**	**DEFLECTION YOKE**
5	**1-526-540-00**	**SOCKET, PICTURE TUBE (CN4, CRT SOCKET)**
⚠ **6**	**1-546-013-00**	**PICTURE TUBE**
7	**1-555-417-00**	**CORD, WITH 8P DIN PLUG (CN1, VF)**
8	**2-042-029-00**	**KNOB, (1)**
9	**2-235-902-00**	**CUP, EYE**
10	2-277-404-00	CHASSIS (FRONT)
11	2-277-405-00	CHASSIS (REAR)
12	**2-277-406-00**	**BUSHING (A), SPRIT**
13	2-277-407-00	BRACKET, BEARING
14	2-277-408-00	COVER, SWITCH
15	2-277-409-00	CUSHION, SWITCH COVER
16	**2-277-410-00**	**HOOD, CRT**
17	2-277-411-00	HOLDER, CRT
18	**2-277-412-00**	**MIRROR**
19	2-277-413-00	BEARING, VF
20	2-277-418-00	PLATE, INDICATION, VF
21	2-277-419-00	PANEL, VF
22	2-277-421-00	INSULATOR (A)
23	2-277-422-00	INSULATOR (B)
24	2-277-423-00	INSULATOR (C)
25	2-277-424-00	INSULATOR (D)
26	**2-277-427-00**	**COVER (A)**
27	**2-277-428-00**	**COVER (B)**
28	3-646-675-00	LABEL, PICTURE TUBE
29	3-701-778-00	LABEL, CAMERA CERTIFICATION (FOR USA/CND)
30	3-701-937-00	LABEL, CAUTION, HIGH VOLTAGE
32	**3-703-043-21**	**LABEL, CAUTION, MAIN**
33	**3-703-080-21**	**LABEL, CAUTION (TOP)**
34	**4-860-515-00**	**EMBLEM, SONY**

NOTE:

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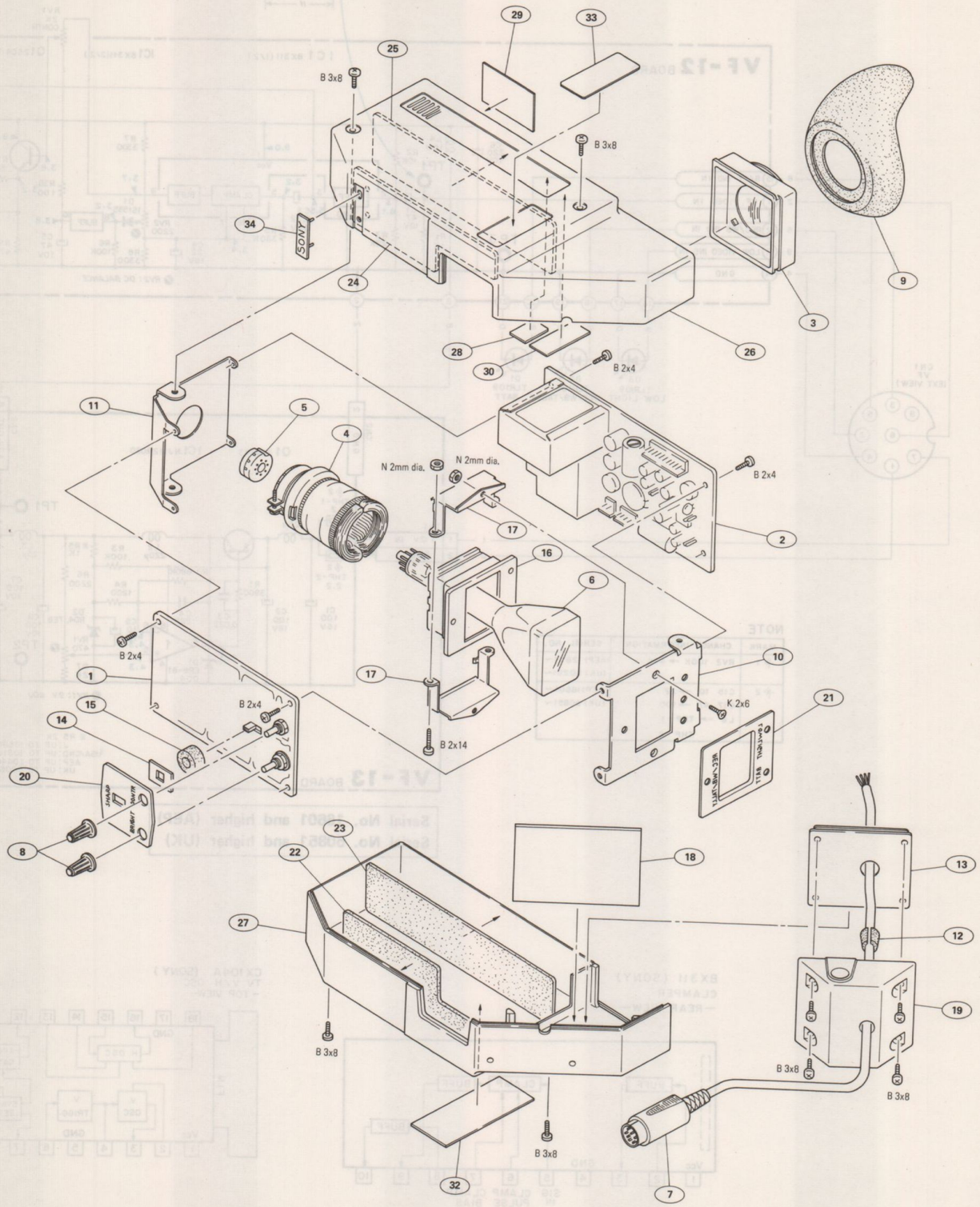
3. Item with no part number and/or no description are not stocked because they are seldom required for routine service.



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4-2. ELECTRICAL PARTS LIST

RESISTOR

Parts that are not listed in the "reference numbers order list" are shown in following table.
Reference numbers are omitted.

CARBON RESISTOR (1/8W) ±5%, 1/8W, non-special type
2.2Ω through 1MΩ

Parts No. 1-246-□□□-00

Value	Parts No. -□□□-	Value	Parts No. -□□□-	Value	Parts No. -□□□-	Value	Parts No. -□□□-
1Ω	–	33Ω	765	1kΩ	783	33kΩ	801
1.1	–	36	826	1.1	844	36	862
1.2	–	39	766	1.2	784	39	802
1.3	–	43	827	1.3	845	43	863
1.5	–	47	767	1.5	785	47	803
1.6	–	51	828	1.6	846	51	864
1.8	–	56	768	1.8	786	56	804
2	–	62	829	2	847	62	865
2.2	751	68	769	2.2	787	68	805
2.4	812	75	830	2.4	848	75	866
2.7	752	82	770	2.7	788	82	806
3	813	91	831	3.0	849	91	867
3.3	753	100Ω	771	3.3	789	100kΩ	807
3.6	814	110	832	3.6	850	110	868
3.9	754	120	772	3.9	790	120	808
4.3	815	130	833	4.3	851	130	869
4.7	755	150	773	4.7	791	150	809
5.1	816	160	834	5.1	852	160	870
5.6	756	180	774	5.6	792	180	810
6.2	817	200	835	6.2	853	200	871
6.8	757	220	775	6.8	793	220	811
7.5	818	240	836	7.5	854		
8.2	758	270	776	8.2	794		
9.1	819	300	837	9.1	855		
10Ω	759	330	777	10kΩ	795		
11	820	360	838	11	856		
12	760	390	778	12	796		
13	821	430	839	13	857		
15	761	470	779	15	797		
16	822	510	840	16	858		
18	762	560	780	18	798		
20	823	620	841	20	859		
22	763	680	781	22	799		
24	824	750	842	24	860		
27	764	820	782	27	800		
30	825	910	843	30	861		

Parts No. 1-247-□□□-00

Value	Parts No. -□□□-
240kΩ	054
270	046
300	055
330	047
360	056
390	048
430	057
470	049
510	058
560	050
620	059
680	051
750	060
820	052
910	061
1MΩ	053

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Ref. No.	Parts No.	Description
VF-12 BOARD		
	A-7511-523-A	MOUNTED CIRCUIT BOARD "VF-12"
C1	1-123-306-00	ELECT 47 10V
C2	1-123-380-00	ELECT 1 100V
C3	1-131-404-00	TANTALUM 0.22 10% 35V
C4	1-123-330-00	ELECT 22 25V
C5	1-123-306-00	ELECT 47 10V
C6	1-123-308-00	ELECT 220 10V
C7	1-102-116-00	CERAMIC 680PF 50V
C8	1-102-113-00	CERAMIC 390PF 50V
C9	1-102-111-00	CERAMIC 270PF 50V
C10	1-108-377-00	MYLAR 0.01 10% 100V
C11	1-123-383-00	ELECT 4.7 100V
C12	1-108-389-00	MYLAR 0.1 10% 100V
C13	1-108-249-00	MYLAR 0.068 10% 50V
C14	1-108-239-00	MYLAR 0.01 10% 50V
C15	1-108-234-00	MYLAR 0.0047 10% 50V
C16	1-123-382-00	ELECT 3.3 100V
C17	1-108-242-00	MYLAR 0.022 10% 50V
C18	1-123-380-00	ELECT 1 100V
C19	1-108-567-00	MYLAR 0.0033 5% 50V
C20	1-129-927-00	POLYPROPYLENE 0.015 5% 100V
C21	1-108-603-00	MYLAR 0.1 5% 50V
C22	1-123-356-00	ELECT 10 50V
C23	1-123-330-00	ELECT 22 25V
D1	8-719-815-55	1S1555
D2	8-719-306-10	SF1
D3	8-719-111-07	RD11E-B
IC1	8-749-931-10	BX311; SONY
IC2	8-751-040-00	CX104A; SONY
L1	1-407-159-XX	MICRO 15
L2	1-407-171-XX	MICRO 150
L3	1-407-171-XX	MICRO 150
L4	1-407-195-XX	MICRO 1mH
Q1	8-724-375-01	2SC403C
Q2	8-724-375-01	2SC403C

Ref. No.	Parts No.	Description
R18	1-246-489-00	CARBON 4.7K 5% 1/4W
RV1	1-222-296-00	CARBON 2K (B) "CONTR"
RV2	1-224-250-XX	METAL 2.2K
RV3	1-222-298-00	CARBON 250K (B) "BRIGHT"
RV4	1-224-256-XX	METAL 220K
RV5	1-224-253-XX	METAL 22K
RV6	1-224-252-XX	METAL 10K
S1	1-552-822-00	SLIDE "SHARP"
VF-13 BOARD		
	⚠ A-7511-524-A	MOUNTED CIRCUIT BOARD "VF-13"
C1	1-123-333-00	ELECT 100 25V
C2	1-123-333-00	ELECT 100 25V
C3	1-108-242-00	MYLAR 0.022 10% 50V
C4	1-102-959-00	CERAMIC 22PF 50V
C5	1-123-356-00	ELECT 10 50V
C6	1-123-307-00	ELECT 100 10V
C7	1-123-307-00	ELECT 100 10V
C8	1-131-420-00	TANTALUM 4.7 10% 10V
C9	1-131-414-00	TANTALUM 2.2 10% 20V
C10	1-123-306-00	ELECT 47 10V
C11	1-107-085-00	MICA 100PF 5% 50V
C12	1-108-244-00	MYLAR 0.033 10% 50V
C13	1-123-299-00	ELECT 1000 6.3V
C14	1-123-356-00	ELECT 10 50V
C15	1-131-377-00	TANTALUM 10 10% 10V
C16	1-108-242-00	MYLAR 0.022 10% 50V
C17	1-123-306-00	ELECT 47 10V
C18	1-123-356-00	ELECT 10 50V
C19	1-108-377-00	MYLAR 0.01 10% 100V
C20	1-102-047-00	CERAMIC 0.01 1kV

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Ref. No.	Parts No.	Description
C21	1-102-047-00	CERAMIC 0.01 1kV
C22	1-108-421-00	MYLAR 0.01 10% 200V
C23	1-123-380-00	ELECT 1 100V
	1-108-365-00	MYLAR 0.001 10% 100V
C24	1-108-367-00	MYLAR 0.0015 10% 100V
	1-108-369-00	MYLAR 0.0022 10% 100V
CN1	1-560-356-00	RECEPTACLE, 2P MALE
	1-561-514-00	PLUG, HOUSING 2P
	1-560-372-00	PLUG, CONTACT
CN2	1-560-362-00	RECEPTACLE, 10P MALE
	1-561-520-00	PLUG, HOUSING 10P
	1-560-372-00	PLUG, CONTACT
CN3	1-560-358-00	RECEPTACLE, 4P MALE
	1-561-516-00	PLUG, HOUSING 4P
	1-560-372-00	PLUG, CONTACT
CN4	1-526-540-00	SOCKET, CRT
D1	8-719-982-04	ERB81-004
D2	8-719-147-24	RD4.7E-B1Z
D3	8-719-815-55	1S1555
D4	8-719-320-31	HFIC
D5	8-719-113-21	RD13E-B1Z8
⚠HVU1	1-453-087-00	HIGH VOLTAGE BLOCK
IC1	8-759-729-03	NJM2903D; JRC
IC2	8-759-157-52	μPC575C; NEC
L1	1-421-013-00	CHOKE 25
L2	1-421-381-00	CHOKE 220
L3	1-421-013-00	CHOKE 25
L4	1-407-171-XX	MICRO 150
L5	1-421-013-00	CHOKE 25
L6	1-459-203-00	VAR, HORIZONTAL LINEARITY
L7	1-407-198-XX	MICRO 2.2mH
L8	1-421-013-00	CHOKE 25

Ref. No.	Parts No.	Description
Q1	8-729-374-02	2SB740
Q2	8-729-663-47	2SC1364
Q3	8-727-587-28	2SC756-872
R6	1-214-565-00	METAL 2.2K 1% 1/8W
R7	1-214-564-00	METAL 2K 1% 1/8W
R10	1-246-401-00	CARBON 1 5% 1/4W
R14	1-202-723-00	COMPOSITION 2.2M 10% 1/2W
RV1	1-224-248-XX	METAL 470
RV2	1-224-255-XX	METAL 100K
RV3	1-224-251-XX	METAL 4.7K
RV4	1-222-846-00	SOLID 1M
THP-1	1-202-850-00	THERMISTOR, POSITIVE, 2.2
THP-2	1-202-850-00	THERMISTOR, POSITIVE, 2.2
FRAME		
	1-451-114-41	DEFLECTION YOKE
⚠A-7609-011-A		PICTURE TUBE, 40CB-4
CN1	1-555-417-00	CORD WITH 8P PLUG, DIN
	1-560-173-00	PLUG, 8P MALE DIN
D1	8-719-801-09	TLR 109 "BATT"
D2	8-719-801-09	TLR 109 "REC/WB/TALLY"
D3	8-719-801-09	TLR 109 "LOW LIGHT"

PACKING METERIAL AND ACCESSORIES

2-277-429-00	CARTON, INDIVIDUAL
2-277-431-00	CUSHION
3-701-621-00	BAG, POLY FOR EYECUP
3-701-625-00	BAG, POLY FOR INSTRUCTION MANUAL
3-701-626-00	BAG, POLY FOR DXF-3
⚠3-783-263-11	MANUAL, INSTRUCTION

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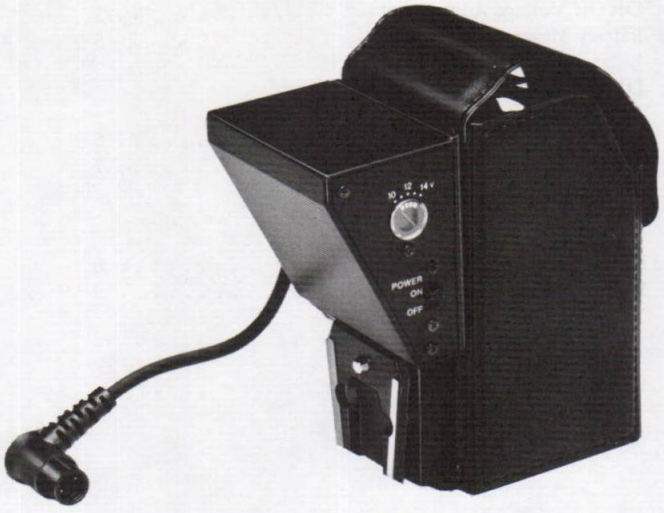
DC-6

BATTERY ADAPTOR



SPECIFICATIONS

Usable battery:	BP-60 Sony battery pack
Output voltage:	DC 11 to 14.5 V With auto shut-off mechanism, battery meter
Weight:	300 g (11 oz)
Dimensions:	71 x 132 x 120 mm (W/H/D)

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3-2. Schematic Diagram 7

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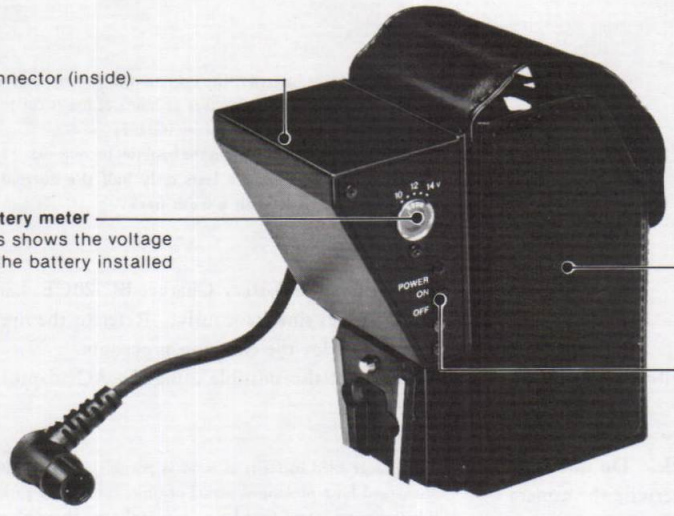
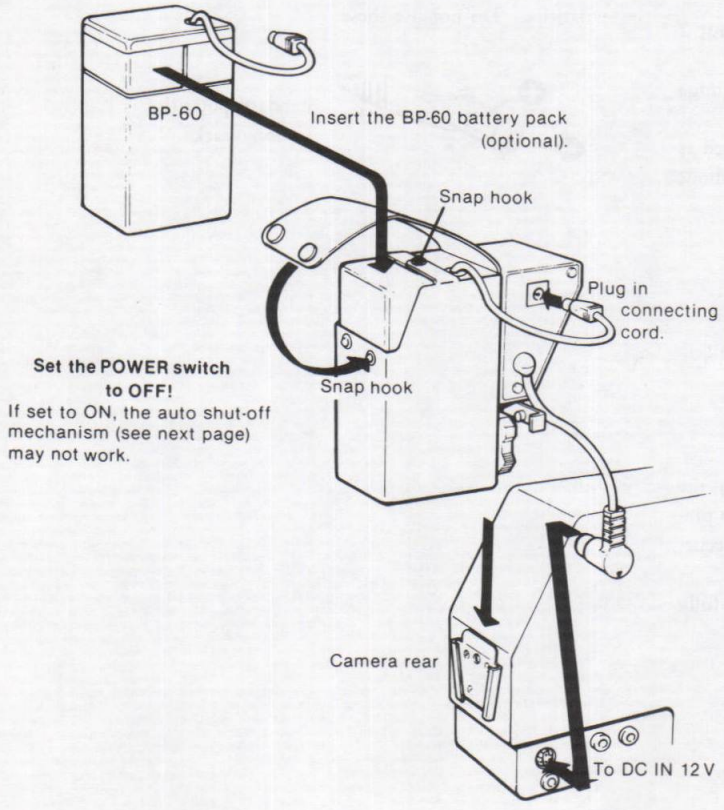
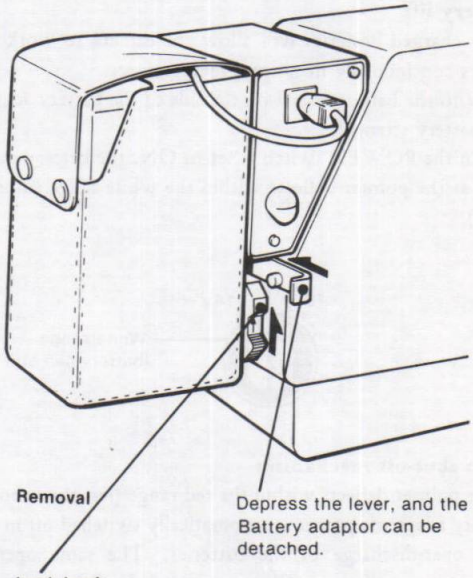
SECTION 1
GENERAL DESCRIPTION


Battery connector (inside)
Battery meter
This shows the voltage of the battery installed
Battery compartment
POWER
ON
OFF
POWER switch
Power is supplied to the camera as soon as this switch is set to ON.
Always set it to the OFF position when mounting the adapter onto the camera.

Mounting the adaptor onto the camera


BP-60
Insert the BP-60 battery pack (optional).
Snap hook
Plug in connecting cord.
Snap hook
Set the POWER switch to OFF!
If set to ON, the auto shut-off mechanism (see next page) may not work.
Camera rear
To DC IN 12 V


Removal
Depress the lever, and the Battery adaptor can be detached.
Lock knob
If this knob is set to the raised position, the above lever cannot be depressed. Use this knob to prevent the lever from shifting out of place during use.

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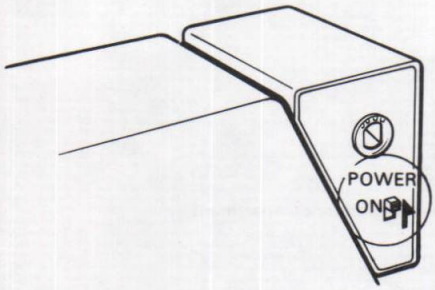
BATTERY PACK

Use the BP-60 battery pack (optional) when recording outdoors. Mount the battery pack onto the rear of the camera, as instructed on the page before, and then set the battery adaptor's POWER switch to ON. The battery will now be activated.



• Be sure to set the battery adaptor's POWER switch to OFF after using the battery-powered camera.

• It is recommended that you detach the battery adaptor **if the camera is not to be powered by the battery pack. Do not connect a cord to the DC IN 12 V connector ;** otherwise the camera will be set up automatically for battery operation and it will not work with other power sources.

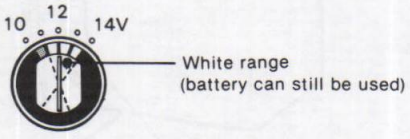
• It is a good idea to have two battery packs, available. One can be housed in the battery adaptor and the other in the carrying case as a spare.

Battery life

Fully charged batteries will allow the camera to work **for about 2 hours** continuously in normal temperatures.

Refer to the battery meter on the side of the battery adaptor to judge the battery strength.

When the POWER switch is set to ON, the battery may be used as long as the pointer deflects within the white range (more than about 11 V).



Auto shut-off mechanism

If the pointer deflects within the red range (less than about 11 V), the battery adaptor's power is automatically switched off in order to prevent over-discharge of the batteries. The same operation occurs when an over-discharged battery pack is loaded.

When the meter pointer deflects near **11 V,** replace with a fully charged battery pack.

• Always set the battery adaptor's POWER switch to OFF when removing the battery pack. If the switch is set to ON, the camera will not work even when the battery pack has been installed again. In cases like this, set the POWER switch to the OFF and set it to ON again.

• Just as with car batteries, the operation in low temperatures shorten the life of the battery pack BP-60. (The number of hours of use is cut to about half that at normal temperature when the temperature is 32°F)

Also, the life is shortened when the batteries become old. The service life is over when a fully charged battery pack **lasts only half the normal temperature operating time and so replace with a fresh pack.**

Charging

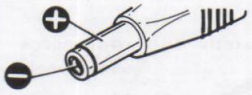
Sony offers the Battery Charger BC-20CE charger which can charge two batteries simultaneously. Refer to the operating instructions of the charger for the charging procedure.

Charging is also possible using the AC adaptor supplied with a portable VTR.

• Recharge used batteries as soon as possible and store them safely. If they are left discharged for a prolonged period of time, the battery pack **may become unusable.** If batteries are stored for a long time, **recharge them about once every 6 months.**

• The red lamp on the charger may not light with an overdischarged battery pack and this may be mistakenly interpreted as the completion of the charging operation. In cases like this, recharge from several hours to several days until the red lamp lights. If the battery pack does not recover its charge, its service life is over and so it should be replaced with a new battery pack.

Some battery packs sold by other companies have a plug with reverse polarities. Do not use these.



Standard polarities
on Sony pack

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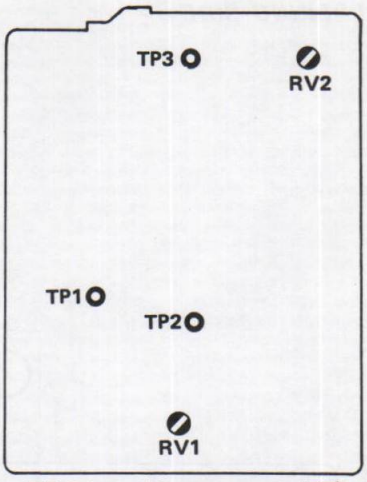
SECTION 2
ALIGNMENT

2-1. EQUIPMENT REQUIRED

- Regulated DC Power Supply (DC output voltage: 9 ~ 15 V)



DC-8 board (component side)

2-2. CUT OFF VOLTAGE ADJUSTMENT

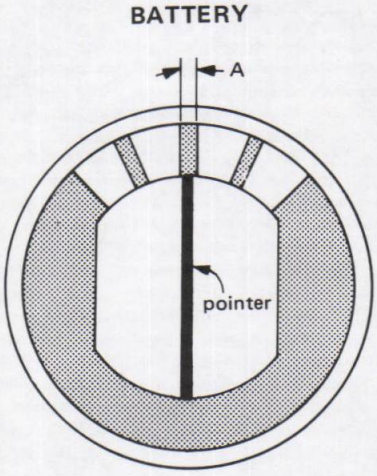
Equipment : DC power supply
Adj point : ⊘RV1/DC-8 board

Adjust : Apply a 12 V dc to the DC IN, and then decrease the applied voltage gradually.
Adjust ⊘RV1/DC-8 board so that the relay contact is disconnected at 10.8 ± 0.05 V dc between pin 2 and pin 5 of CN2 (DC OUT).

2-3. BATTERY METER ADJUSTMENT

Equipment : DC power supply
Adj point : ⊘RV2/DC-8 board

Adjust : Apply a 12 ± 0.1 V dc to the DC IN.
Adjust ⊘RV2/DC-8 board so that the pointer of the battery meter swings in the specified position "A".



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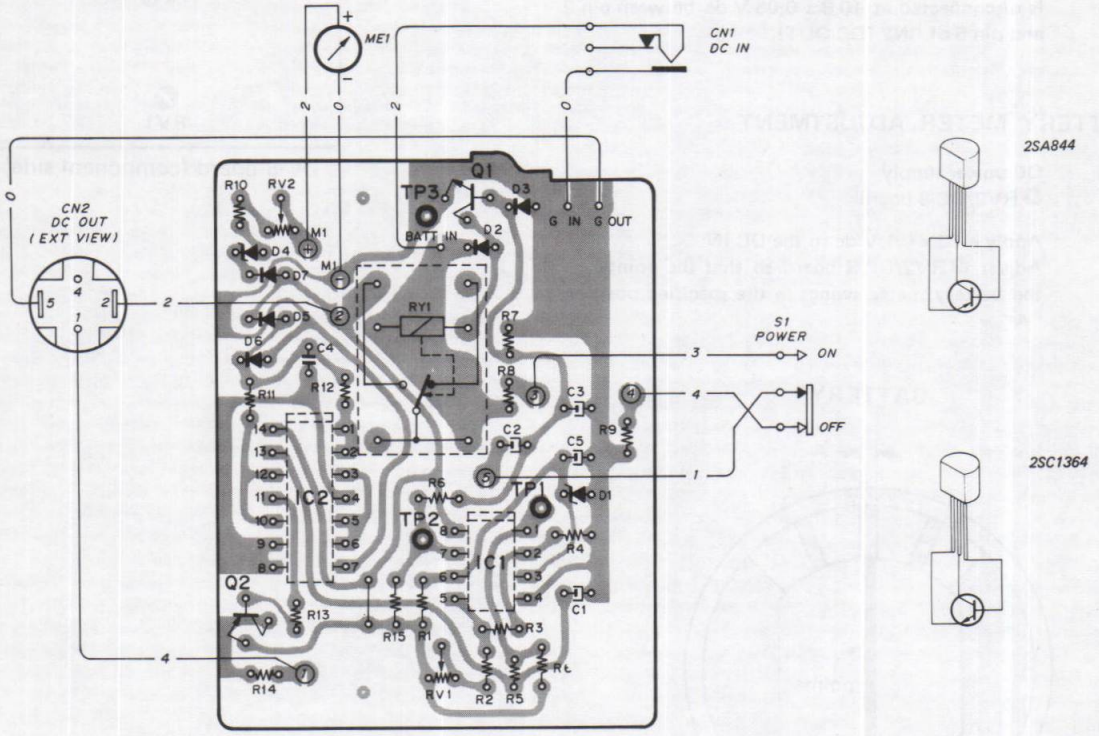
SECTION 3
DIAGRAMS

3-1. MOUNTING DIAGRAM
– SOLDERING SIDE –



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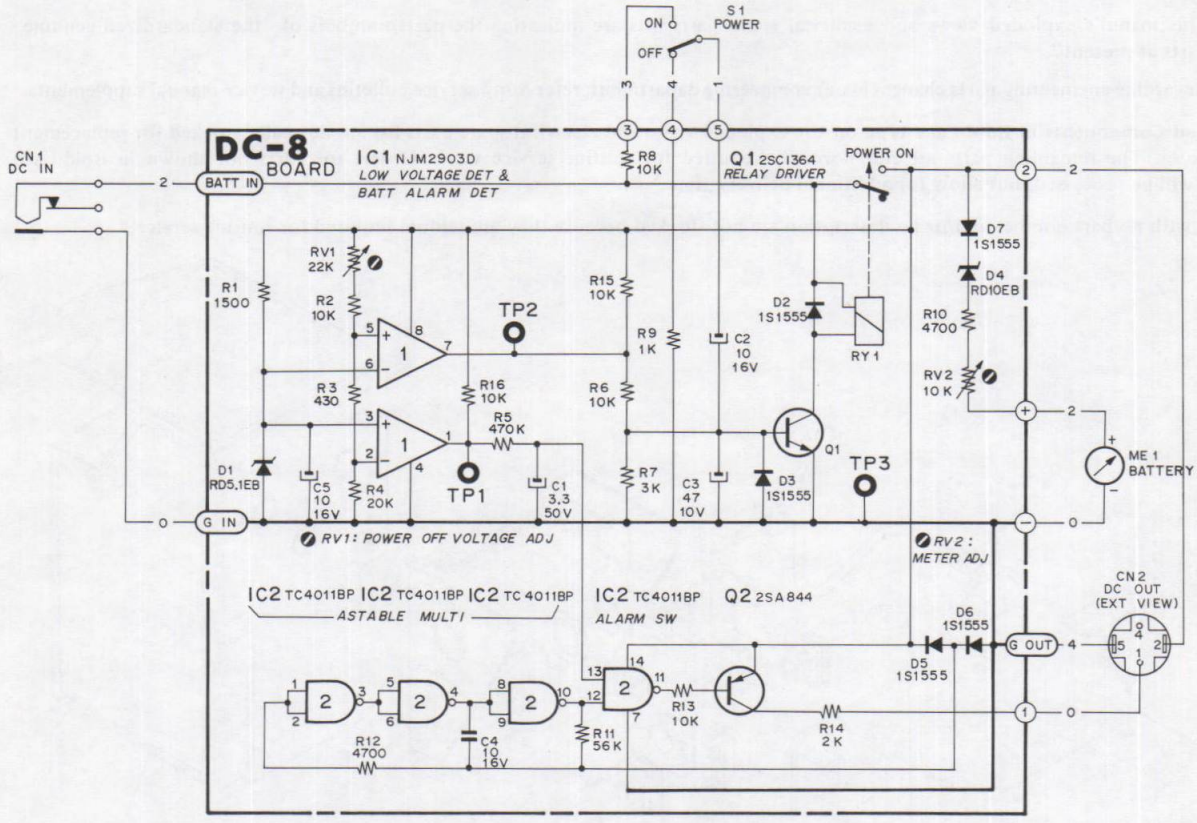
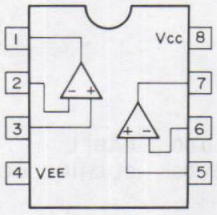
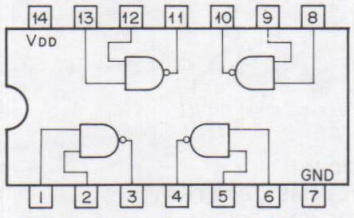
3-2. SCHEMATIC DIAGRAM

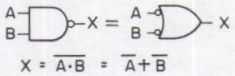


NJM2903D (JRC)
OPERATIONAL AMPLIFIER
-TOP VIEW-



TC4011BP (TOSHIBA)
C-MOS 2-INPUT NAND GATE
-TOP VIEW-





A	B	X
0	0	1
0	1	1
1	0	1
1	1	0

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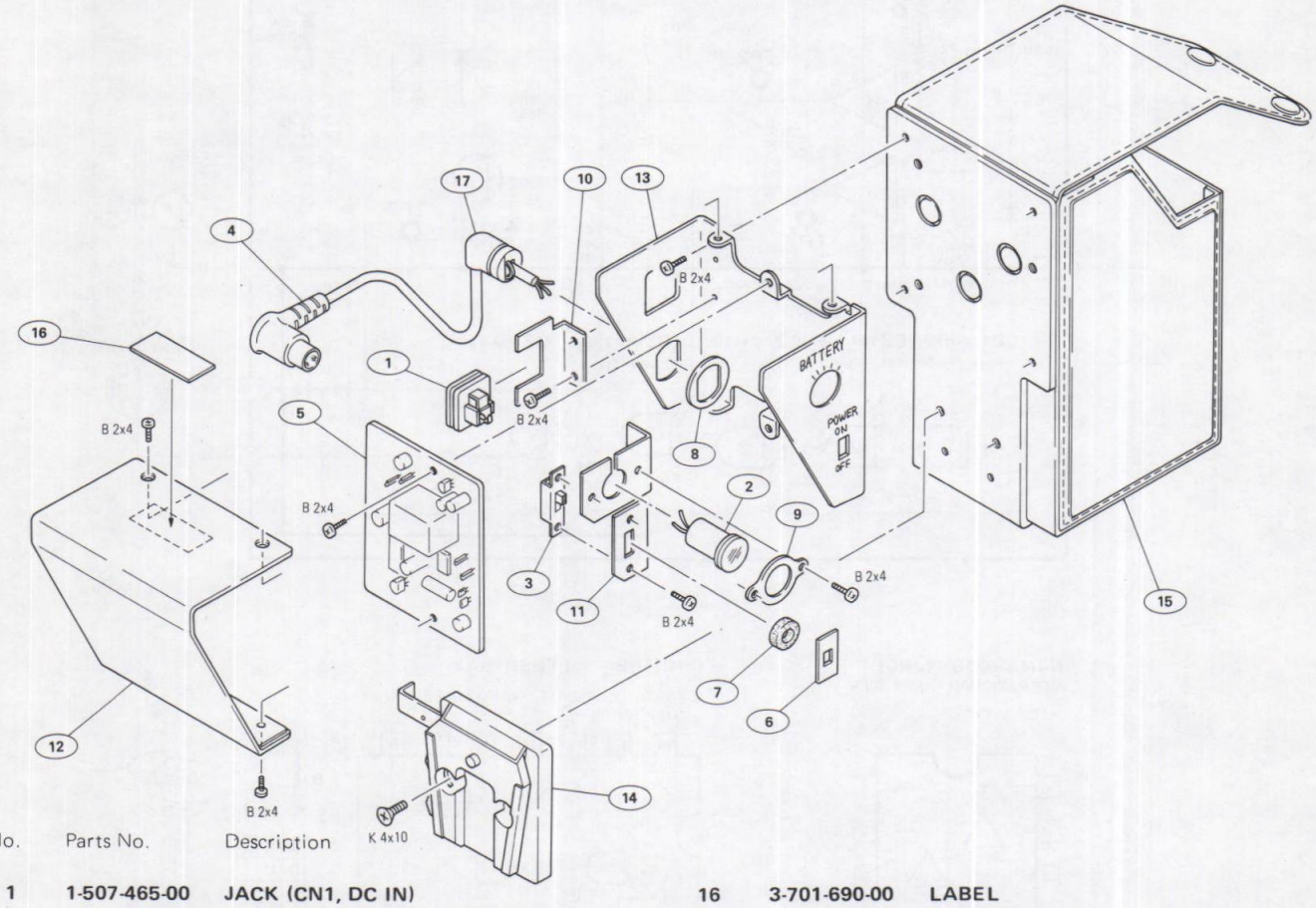
SECTION 4
SPARE PARTS

PARTS INFORMATION

4-1. EXPLODED VIEW

1. Replace Parts that are supplied from Sony Parts Center can sometimes have different shape and external appearance than what are actually used in equipment. This is due to **"accomodating the improved parts and/or engineering changes"** or **"standardization of genuine parts"**.
   - This manul's exploded views and electrical spare parts lists are indicating the parts numbers of "the standardized genuine parts at present".
   - Regarding engineering parts changes in our engineering dapartment, refer Sony service bulletins and service manual supplements.
2. **Printed Components in Bold-Face type** on the exploded views and electrical spare parts list are normally stocked for replacement purposes. The remaining parts are not normally required for routine service work. Orders for parts not shown in Bold-Face type will be processed, but allow for additional delivery time.
3. Item with no part number and/or no description are not stocked because they are seldom required for routine service.



No.	Parts No.	Description
1	**1-507-465-00**	**JACK (CN1, DC IN)**
2	**1-520-427-00**	**METER, LEVEL (ME1, BATTERY)**
3	**1-552-822-00**	**SWITCH, SLIDE (S1, POWER)**
4	**1-555-458-00**	**PLUG (CN2, DC OUT)**
5	1-603-027-00	PRINTED CIRCUIT BOARD "DC-8"
6	2-277-408-00	COVER, SWITCH
7	2-277-409-00	CUSHION, SWITCH COVER
8	2-277-502-00	STOPPER, BUSHING
9	2-277-503-00	RETAINER, METER
10	2-277-504-00	STOPPER, JACK PLATE
11	2-277-505-00	STOPPER, METER SWITCH
12	2-277-506-00	COVER
13	2-277-507-00	CASE
14	2-277-509-00	SHOE, QUICK
15	**2-277-510-00**	**CASE, SOFT**
16	**3-701-690-00**	**LABEL**
17	**3-703-001-00**	**BUSHING, CORD**

NOTE:

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4-2. ELECTRICAL PARTS LIST

Ref. No.	Parts No.	Description
	A-7401-042-A	BATTERY ADAPTOR: DC-6
DC-8 BOARD		
	1-603-027-00	PRINTED CIRCUIT BOARD "DC-8"
C1	**1-123-382-00**	**ELECT 3.3 100V**
C2	**1-123-356-00**	**ELECT 10 50V**
C3	**1-123-306-00**	**ELECT 47 10V**
C4	**1-121-806-00**	**ELECT NONPOLAR 10 16V**
C5	**1-123-356-00**	**ELECT 10 50V**
CN1	**1-507-465-00**	**JACK "DC IN"**
D1	**8-719-151-07**	**RD5.1E-B**
D2	**8-719-815-55**	**1S1555**
D3	**8-719-815-55**	**1S1555**
D4	**8-719-110-07**	**RD10E**
D5	**8-719-815-55**	**1S1555**
D6	**8-719-815-55**	**1S1555**
D7	**8-719-815-55**	**1S1555**
IC1	**8-759-729-03**	**NJM2903D; JRC**
IC2	**8-759-240-11**	**TC4011BP (CD4011BE; RCA)**
ME1	**1-520-427-00**	**BATTERY**
Q1	**8-729-663-47**	**2SC1364**
Q2	**8-729-384-48**	**2SA844**
R1	**1-246-785-00**	**CARBON 1.5K 5% 1/8W**
R2	**1-214-581-00**	**METAL 10K 1% 1/8W**
R3	**1-214-548-00**	**METAL 430 1% 1/8W**
R4	**1-214-588-00**	**METAL 20K 1% 1/8W**
R5	**1-247-049-00**	**CARBON 470K 5% 1/8W**
R6	**1-246-795-00**	**CARBON 10K 5% 1/8W**
R7	**1-246-849-00**	**CARBON 3K 5% 1/8W**
R8	**1-246-795-00**	**CARBON 10K 5% 1/8W**
R9	**1-246-783-00**	**CARBON 1K 5% 1/8W**
R10	**1-246-791-00**	**CARBON 4.7K 5% 1/8W**
R11	**1-246-804-00**	**CARBON 56K 5% 1/8W**
R12	**1-246-791-00**	**CARBON 4.7K 5% 1/8W**
R13	**1-246-795-00**	**CARBON 10K 5% 1/8W**
R14	**1-246-847-00**	**CARBON 2K 5% 1/8W**
R15	**1-246-795-00**	**CARBON 10K 5% 1/8W**
R16	**1-246-795-00**	**CARBON 10K 5% 1/8W**
RV1	**1-226-773-00**	**METAL 22K**
RV2	**1-226-710-00**	**SOLID 10K**
RY1	**1-515-380-00**	**12V 400Ω**
S1	**1-552-822-00**	**SLIDE "POWER"**
FRAME		
CN2	**1-555-458-00**	**CORD WITH DC PLUG, 4P "DC OUT"**

NOTE:
Parts printed in **Bold-Face type** are normally stocked for replacement purposes. The remaining parts shown in this manual are not normally required for routine service work. Orders for parts not shown in Bold-Face type will be processed, but allow for additional delivery time.

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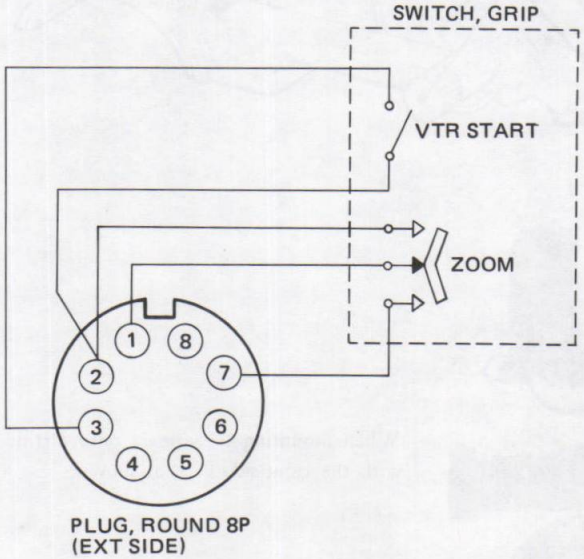
BRACE

SPECIFICATIONS

Featuring:	VTR start switch and motorized zoom button
Weight:	930 g (2 lb 1 oz)
Dimensions:	164 x 72 x 442 mm (W/H/D)



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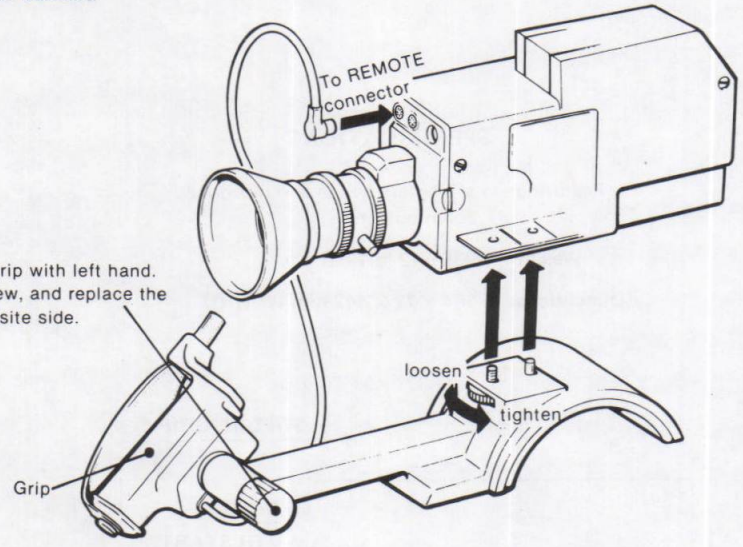
SECTION 1
GENERAL DESCRIPTION

Motorized zoom button
This enables telephoto ⇄ wide angle motorized zooming
(the MANUAL/AUTO selector of the lens is set to AUTO).
Shoulder rest
Grip
VTR start button
Recording starts when this is pressed.
It stops when the button is pressed once more.
(The same function as the camera's VTR START switch.)

Mounting the brace onto the camera


To REMOTE connector
To operate the grip with left hand.
Remove the screw, and replace the grip to the opposite side.
loosen
tighten
Grip

When mounting the camera onto a tripod, the brace can be attached with the front-side back as shown.

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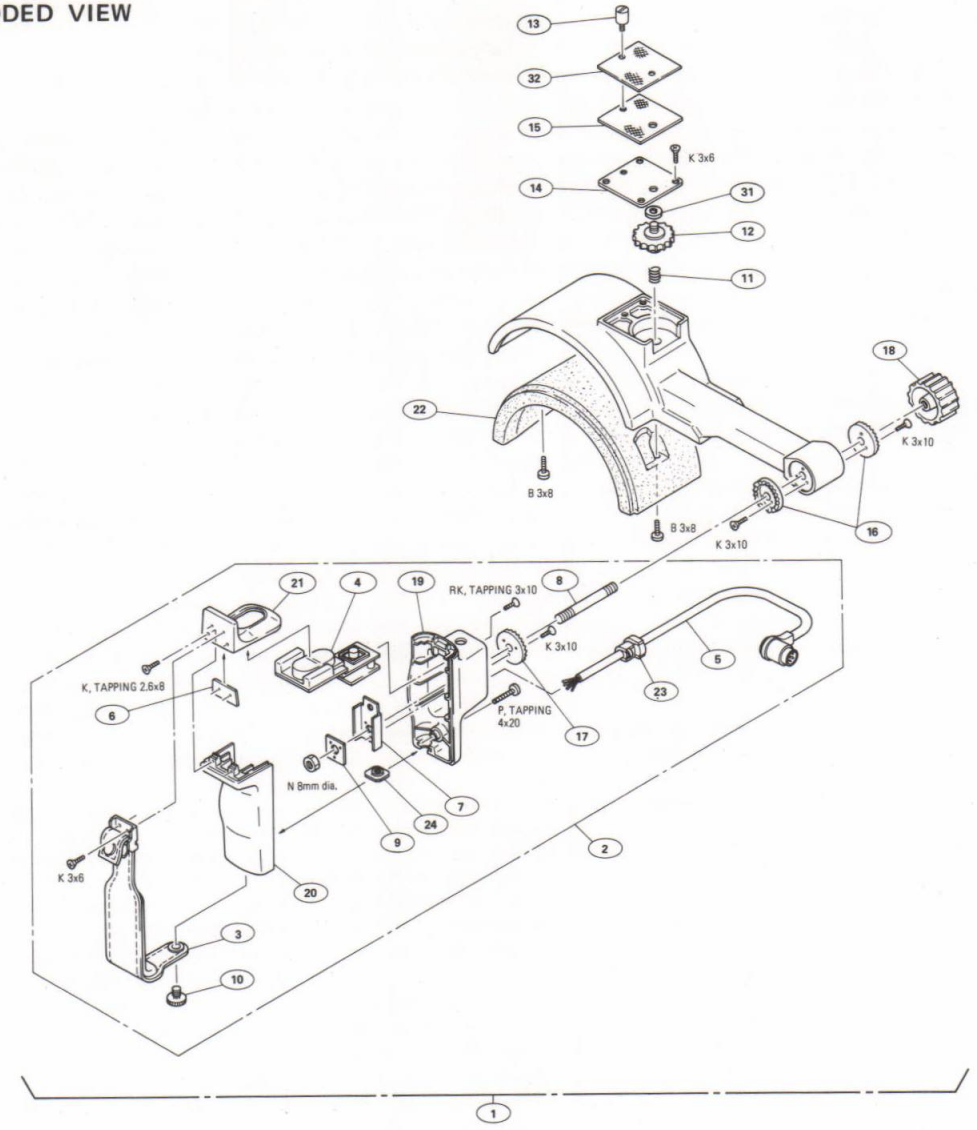
SECTION 2
SPARE PARTS

EXPLODED VIEW



No.	Parts No.	Description
1	A-7401-044-A	VCT-8 ASS'Y
2	A-7401-049-A	GRIP ASS'Y
3	**X-3661-902-0**	**BELT ASS'Y, GRIP**
4	**1-553-498-00**	**SWITCH, GRIP**
5	**1-560-223-21**	**PLUG, ROUND (8P) (REMOTE)**
6	2-280-501-00	BRACKET, BAND
7	2-280-502-00	REINFORCEMENT
8	**2-280-503-00**	**SHAFT, SIDE**
9	2-280-504-00	PLATE, PAD
10	**2-280-505-00**	**SCREW, CAMERA**
11	2-280-506-00	SPRING, COMPRESSION
12	**2-280-507-00**	**SCREW, FITTING, CAMERA**
13	2-280-508-02	PIN
14	2-280-509-02	RETAINER, CAMERA
15	**2-280-510-00**	**RUBBER, CAMERA TABLE**

No.	Parts No.	Description
16	2-280-511-01	BRACKET, ADJUSTMENT, ANGLE
17	2-280-511-11	BRACKET, ADJUSTMENT, ANGLE
18	**2-280-512-00**	**NUT, FASTENING**
19	**2-280-513-00**	**GRIP (A)**
20	**2-280-514-00**	**GRIP (B)**
21	**2-280-515-00**	**GRIP (C)**
22	**2-280-517-00**	**CUSHION, PAD**
23	**3-005-073-00**	**BUSHING**
24	3-650-759-00	NUT, PLATE
31	2-280-518-00	SPACER
32	**3-664-286-00**	**SPACER (B)**

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